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ABSTRACT

A study examined the feasibility of adding employer-generated job titles to the North Carolina Unemployment Insurance Individual Wage Record as a means to providing a more comprehensive source of occupational data than has been possible with currently operating federal and state systems. During the study, researchers conducted structured interviews with representatives of 10 private industry firms located in Raleigh, Charlotte, and Winston-Salem and had unstructured discussions with representatives of the North Carolina Employment Security Division and Department of Community Colleges. In addition, technical documents and applicable legislation were consulted. Based on these data sources, it is clear that the state's unemployment insurance system is already being used for labor market information purposes. The expansion of the current form to include employer-generated job titles would further enhance the unemployment insurance database and thus produce a comprehensive labor market information system that would substantially improve the state's capability to plan and administer the use of public funds for a wide range of purposes. Therefore, it is recommended that enabling legislation be passed to authorize and fund the supporting additional research and development for a consolidated employer reporting requirement and an accompanying state processing and delivery system for employment data and that unemployment reporting legislation be amended to include a mandate for reporting wage items. (MN)

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EXPANSION OF THE NORTH CAROLINA UNEMPLOYMENT INSURANCE INDIVIDUAL WAGE REPORT TO INCLUDE OCCUPATIONAL DETAIL: A Study of A Consolidated Approach To Occupational Data Collection

By

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Prepared for the North Carolina
State Occupational Information Coordinating Committee

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PREFACE

This study was conducted for the North Carolina State Occupational Information Coordinating Committee (NOICC) under contract number 2-3495-9025-00-5-00. Funds for the study were provided to NCSOICC from the Governor's CETA Discretionary Fund.

The authors thank all of the people in the North Carolina State Government and in private industry in North Carolina who worked with us and assisted us in the collection of data for this study. Although the responsibility of piecing together the myriad sources of information is ours, the study could not have been completed without the cooperation of many persons. David A. Garrison, Assistant Chief, LMI Division who acted as the principle liason for the study team with the North Carolina Employment Security Commission, provided invaluable assistance as did several other members of the Labor Market Information Division.

Our sincere appreciation is extended to Dr. Larry J. Blake, State President, Department of Community Colleges for his encouragement of our work. The project was supervised by Joyce F. Kinnison, Executive Director, NCSOICC, and Kathryn Baker Smith, Assistant to the State President of the Department of Community Colleges for Policy Affairs. Their valuable insights concerning the project and their administrative expertise improved our work. The opportunity to work with them was a high point of our involvement.

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I. BACKGROUND

INTRODUCTION

The State of North Carolina is in need of accurate and comprehensive data on occupational demand and supply. These data are required in the State to plan vocational education programs, employment and training programs, to assist economic development efforts, to support the State's career exploration programs, and to serve more efficiently private sector data needs.

Efforts have been underway to study various means for improving the State's capability to collect, process and deliver improved occuapational and labor market information.

The purpose of this study is to examine an alternative approach to collection of occupational information. The approach under consideration involves the addition of employer-generated job titles to the Unemployment Insurance Individual Wage Record as means to providing a more comprehensive source of occupational data than has been possible with currently operating federal state systems.

Most recently the North Carolina Employment Security Commission was charged with the responsibility for operating a single center for production and delivery of labor market information.[1] Prior to this action, the North Carolina Department of Commerce and the Governor's Council on Management Development contracted for a study to determine "how to obtain more adequate information about occupational employment patterns in North Carolina within the next few years." (page 1)[2] Underlying these and other state efforts has been the development of the North Carolina Multi-Purpose Occupational Information System (MPOIS), designed to improve access to occupational supply and demand data, which is now operational. A recent evaluation of the MPOIS recommended a number of improvements in data access which were necessary to allow the MPOIS to serve the purpose for which it was designed.[3]

As a result of recent Federal initiatives, planners at all levels of government and the private sector are faced with the need to strengthen data collection programs which will enable more efficient use of tax dollars expended on public jobs training and to support economic development at a time when the Federal Administration is seeking to reduce its overall role in jobs training in favor of an increased role by the states. This initiative will likely require states to assume more of the cost for programs, such as labor market information.

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[1] State of North Carolina, Executive Order 77, Governor's Oversight Committee for Official Labor Market Information, March 3, 1982.

[2] Allen, S., et. al. Predicting Occupational Employment Patterns in North Carolina, Center for Urban Affairs and Community Services, North Carolina State University, January, 1982.

[3] Jurado, E.A. and Wolff, W.W. Evaluation of the North Carolina Multi-Purpose Occupational Information System, North Carolina SOICC, Department of Administration, April, 1982.

The Bureau of Labor Statistics (BLS) Occupational Employment Statistics (OES) program is the most comprehensive single source of data currently available on occupational demand. Without data from this system, there are no other sources for estimating occupational demand which can be considered to provide reliable, detailed, timely and geographically specific information on the demand for occupations, now and in the future. However, meager funding for the OES program in most states and lack of funding for the program in others, provides cause for concern for the future capability to produce occupational demand of sufficient quality, detail, and timeliness to support state planning efforts. BLS National office support of the State and Area Projections program, which is based on OES occupational estimates has been virtually eliminated through budget cuts initiated in FY 82. Although included in the new Jobs Training Partnership Act (JTPA), the OES program is not funded at levels in each state which are likely to allow for validation and improvements needed in the system to support state planning efforts.

Regardless of the continued viability of the OES program, there are several gaps in the collection of occupational demand and supply which the OES program was not designed to address. As a collection system for occupational data, the OES program collects data on occupational demand in non-agricultural and non-self-employed sectors.

The gaps in the OES demand data collection not withstanding, there are gaping holes in the collection of occupational supply data in every state which cast justifiable suspicion on well-founded efforts to report occupational demand and supply relationships through Congressionally-mandated occupational information systems. Among the gaps which have failed to be addressed successfully over the years by federal or state programs is information on those persons transferring between occupations (occupational mobility), persons arriving and leaving the labor market with identifiable occupational skills (geographic mobility), and the potential impact on supply of new entrants to the labor market with occupational skills. Further gaps exist in data necessary to support job development and placement for the unemployed and current data on wages and career ladders necessary for informed hiring and career guidance programs. These and other sources of occupational supply and demand data are needed to allow for a comprehensive and meaningful assessment of occupational supply/demand relationships in each state and for the nation.

Approaches to more comprehensive and consolidated state data collection systems must be considered in view of dwindling federal resources and the recent JTPA legislation (outlined below) which places in governors' hands the direction of the labor market information program in each state.

The recently enacted JTPA (PL 97-300), Section 462.(a), has authorized the continuation of an "occupational employment statistics program" to provide employment data and job openings by industry and occupation for the nation, state, and local areas. Section 462.(c) requires use of uniform definitions and adherence to standards of statistical reliability.

In the same act, Section 106.(b)(1) requires that the "basic measure of performance for adult training programs under Title II is the increase in employment and earnings and the reduction in welfare dependancy resulting from participation in the program... "The Secretary shall prescribe standards on the basis of appropriate factors which <u>may</u> include, (A) placement in unsubsidized employment, (B) retention in unsubsidized employment, (C) the increase in earning, <u>including</u>

hourly wages, and (D) reduction in the number of individuals and families receiving cash welfare payments and the amounts of such payments."

Section 106.(b)(3) states that "the standards shall include provisions governing...cost effective methods for obtaining such data as is necessary to carry out this section which, not withstanding, any other provision of law, may include access to earnings records, State Employment Security records, Federal Insurance Contribution Act records, State Aid to Families with Dependent Children records, statistical sampling techniques, and similar records or measures."

Uses of appropriate labor market information to form the bases of decisions regarding program planning and policy determination are stressed throughout the act. In fact, Section 125(d) indicates specifically that "No Provision of this part or any other provision of Federal Law shall be construed to prohibit any state from combining or consolidating Federal administrative management information reporting requirements relating to employment, productivity, or training, if notice is transmitted by the Governor to the head of each appropriate Federal and state agency responsible for the laws governing the Federal reporting requirements. The head of each appropriate Federal agency shall approve the combination or consolidation unless, within sixty days after receiving the notice, the Federal agency can demonstrate that the combination or consolidation will not meet the essential purpose of the affected Federal law."

In summary, it is clear that the JTPA imposes new data requirements for monitoring and follow-up for program evaluation, as well as strengthened support for improved occupational supply and demand for planning. Further, the JTPA requires more detail than the OES program can provide, as presently configured. It is apparent that data requirements of an occupational employment statistics program must be subsummed under the expanded data requirements of the JTPA.

Given the JTPA mandate, at issue in this study is not the consideration of replacing the OES program with another program of similar proportions. Rather this study considers a comprehensive data collection system which will supplement, while continuing to use, the OES program capability, as well as provide new data on occupational suppy and demand not currently available. This study seeks to build upon current federal programs and work already conducted in other states directed toward the alternative approach being considered here. The following section provides a review of work being undertaken in other states and one territory concerning the addition of occupational detail to the UI individual wage report.

RELATED STUDIES AND DEVELOPMENTS

Utah began a consideration of a consolidated occupational information collection program in 1975[4] with an "experiment" which requested all employing establishments in Utah, covered under Unemployment Insurance Laws, to provide a Quarterly Report of Payroll Accessions (QPA). This report was instituted to detect duplicative and fraudulent claims by individuals claiming both public assistance and UI benefits for the same period, through the matching of social security numbers.

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[4]State of Utah, Utilizing Occupational Hires Data: A Research Study (Utah Job Service), February, 1977, 99 pages.

While the Utah UI law did not technically require the Quarterly Report of Payroll Accessions, the QPA form itself was attached to mandatory reporting forms and the "voluntary" nature of the QPA Report was not explicitly noted. Furthermore, the QPA report asked for another item of information - "job titles of individuals hired" - in addition to name, social security number, and date of hire. (See Appendix A)

Experience with Utah's QPA report has produced significant improvements to fraud detection techniques as they apply to a "wage request reporting" state. (In Utah, no wage record by individual employee is required for firms which have been "experience rated" for UI purposes, i.e., existed for more than 3 years).

On the other hand, "job title" information from the QPA has not been fully exploited and, in fact, keypunching of the "job title" field from completed QPA forms is not done routinely. Part of the problem stems from the design of the form itself, which leaves very little room for filling in job titles and the lack of any helpful instruction on how to complete the form. Some of the past indifference regarding the use of already collected occupational data is most likely due to the fact that, heretofore, there has been no voiced need for analysis of occupational "flows". Since the OES program already took care of the "point-in-time", or "stock" analysis and there were ancillary projects related to Job Vacancy, it appeared that most of the need for occupational information had been met.

Only in recent years have the requirements for program performance monitoring and follow-up been translated to a need for analysis of individual client records focusing on employment status, wage rates and occupational titles. Utah now considers the need to examine individual work histories for human resource planning and evaluation, as well as for fiscal management through fraud detection.

In response to these current issues, beginning with the fourth quarter of 1982, Utah mandated QPA reporting. The new form (Utah Form 3) is called "Wage List and Report of Hires and Rehires." This report is now mandatory for all UI-covered employers and includes (see Appendix A2) the following elements: Social Security Number, Gross Quarterly Wages, Date of Hire, Hourly Wage Rate, and Job Titles. In addition, there is a proposal (in draft form) which will consider legislation to require this type of reporting for all employees (not just new hires and rehires) beginning in 1984.

The Utah consolidation work is being done in conjunction with development of computerized software routines designed to convert employer-generated job titles to the Standard Occupational Classification (SOC). The initial developmental work for this process, referred to as AUTOSOC, was funded by the National Occupational Information Coordinating Committee.[5] AUTOSOC has been used in this study to code occupational titles for North Carolina firms and is discussed below under "The AUTOSOC Experiment" on page 32.

In a separate developmental program, the Virgin Islands Bureau of Labor Statistics, under direction of Ms. Elizabeth Deutermann, has requested that employers report occupational titles on all UI quarterly reports during the first quarter (January - March) of each year. Because of the small number of employers

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[5]State of Utah, Converting Employer-Generated Job Titles to Standard Occupational Classifications Using "AUTOSOC". (Utah Job Service), November, 1981, 38 pages.

reporting (approximately 2,200), the system is operated using a multi-part carbon form whereby occupational titles are stripped from the basic UI data by the Labor Statistics personnel, thus not interferring unduly with regular UI report processing.[6] Plans are to continue collection of a second round of data during the first quarter, 1983, with processing of the data to be completed by June, 1983.

In 1981, NOICC funded a companion study, to the Utah "AUTOSOC" development project, to conduct a preliminary feasibility study to determine the pros and cons of creating a consolidated occupational information collection system by adding an employer-generated job title to the UI Individual Wage Record.[7] The project, conducted under the auspices of the Colorado SOICC, provided assessment of interviews with selected state agencies and private industry regarding the new approach as well as discussion of a number of implementation issues, including problems and potential benefits. This study recommended a step-wise set of general and technical recommendations necessary to proceed with research and planning for possible implementation of the approach. Since that study, the Colorado SOICC has proposed the conduct of a systems test for combination of data collection systems which is still being evaluated by the Colorado Department of Labor and Employment. Currently, plans include consideration of the new approach in the redesign of the UI data system during FY83 and 84.

Finally the State of Florida has considered the UI/Occupational Title approach through a CETA-funded project during 1982. Although the final report from the project was not dissiminated, it is understood that the recommendation from the Florida Bureau of Research and Analysis was not to pursue study of the approach because of technical and political problems too great to overcome. However, a May, 1982 publication by the Governor's Office of Planning and Budgeting concluded that "the use of the Unemployment Insurance Wage Report File as a source of comprehensive labor market information should be reviewed by the Legislature and the Governor" (page 43).[8]

The North Carolina study, presented here, represents an attempt to further study "the UI/Occupational Title" approach to occupational information collection. The next section discusses the procedures used in the conduct of the study.

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[6]Deutermann, Elizabeth, Personal Communications, Spring, 1982 and January, 1983.

[7]Jurado, E.A. and Wolff, W.W. Addition of An Occupational Title to the Colorado Unemployment Insurance Individual Wage Report: A Feasibility Study. (Colorado SOICC), October, 1981, 106 pages.

[8]State of Florida, Labor Market Demand Information in Florida: Analytical Overview. (Office of the Governor, Planning and Budgeting), May, 1982, 48 pages.

II. PROCEDURES

Introduction

This study is based on information collected from personal interviews conducted over a 60-day period. Interview information was analyzed and consolidated with information obtained from technical documents to address a number of issues of significance to the state of North Carolina in determining whether to proceed with further research and possible implementation of the approach under study. Four basic objectives guided the interviews conducted with representatives of state agencies and private industry. These were:

1. To determine whether consolidated data collection, built around the UI reporting system, can provide timely and accurate data to all users, without degradation of the UI reporting system, itself.

2. To determine if employer-generated job titles can be used as suitable "proxies" for occupational titles in sufficient numbers to warrant the approach being tested.

3. To determine if employer-generated job titles can be converted to a standard occupational classification by using computer software developed for that purpose.

4. To investigate alternative methods of increasing the precision of conversion between employer-generated job titles and standard occupational codes.

These above objectives were intended to restrict the current inquiry to an investigation of technical feasibility, as opposed to consideration of political issues surrounding the changes which would be necessary in the current UI and LMI programs should the state elect to pursue further the study approach.

The results and analysis of the interviews are reported under findings in section III below.

PRIVATE INDUSTRY INTERVIEW PROCEDURES

Representatives of ten (10) firms were interviewed with locations in Raleigh, Charlotte and Winston-Salem. The firms were large to medium size firms which are considered "pace setters" in cooperation with state employment and training programs and in their personnel/human resources programs. There is no attempt to depict these firms as representatives of all firms in North Carolina. Rather, interviews with representatives of these firms were intended to confirm findings of a similar set of firms in a previous study conducted in Colorado, referenced in Section I. These firms were engaged in diverse industrial activities including data processing equipment manufacture, textile manfacture, and other high-tech manufacturing, aviation, regulated public utilities, travel services and the publication of a daily newspaper.

Total employment of the firms interviewed ranged from 340 to over 11,000. All of the firms were covered by the North Carolina Unemployment Insurance (UI) program and all had responded to the Occupational Employment Statistics (OES) survey during the last round which covered their respective industries. All but one of the interviews were conducted in the firm's corporate offices. Personal interviews ranged from 30 to 60 minutes. One interview was conducted by telephone, with a duration of 25 minutes.

The authors had no previous acquaintance with any of the firm representatives interviewed. For most of the interviews, the person with whom the authors spoke was the same person responsible for either filling out or supervising the completion of employment questionnaires and similar requests from outside of the firm. In several of the interviews, additional persons were brought into the discussion to provide information about either UI report processing, data processing support for the personnel or financial functions or payroll procedures.

Although the firms interviewed are not considered as a random sample of North Carolina firms, the authors see no reason to assume them to be atypical of other large and medium sized firms in North Carolina with regard to their capabilities and willingness to:

- respond to the OES survey
- respond to the UI Quarterly Wage Report
- retrieve payroll and personnel data and to report that data by automated or manual methods
- differentiate between worker functions using detailed titles and job descriptions.

It should be noted, however, that these firms cannot be considered entirely representative of all firms with regard to their willingness to cooperate on the reporting of employment data to the state. This is because the firms which were chosen had already responded to the OES survey. Interviewees with firms who had refused to complete the survey would probably have responded more negatively to the interview, although this may not have been true in cases where the firms perceived this effort as an attempt to consolidate reporting and improve state management of required programs.

Exhibit I provides a set of interview questions asked of private industry representatives. The response to these and other questions asked during the interviews will be summarized in the section reporting findings from the study.

STATE AGENCY INTERVIEW PROCEDURES

Interviews were conducted with representatives of eleven state offices for purposes of orientation to the project, as well as to obtain technical information relating to the feasibility of the approach. The following state offices were contacted:

- Employment Security Commission, Office of the Chairman; LMI Division, ADP Division

- Department of Community Colleges, Offices of the President and Vice President

EXHIBIT I

STRUCTED INTERVIEW QUESTIONS FOR

PRIVATE INDUSTRY INTERVIEWS

1. How many requests for employment wage data would you estimate that your company responds to over a year's time? (These would include requests for information about the numbers and types of jobs your firm currently has, the number and types of jobs for which you hire regularly, the wages paid for selected jobs, the expected growth/outlook for selected jobs, numbers of persons by sex and ethnic status you have in different types of jobs.)

2. How much time would you estimate that it took to complete the OES survey for your firm?

3. Are you aware that your firm is covered under the state's unemployment insurance program and that a report is submitted quarterly which reports, by social security number, each worker's quarterly wages paid?

4. Is the UI report (referred to in question 3) an automated report? Is it submitted by magnetic tape; if not automated, could we review one of your NCUI 101 manual reports?

5. Does your firm operate an automated personnel/human resources data system (P/HRDS)? Does it contain detailed job titles? Can a request for a report of all job titles by SSN be responded to; if the respondent replied "No" to this question, question 7 was then asked.

6. Based upon your knowledge of your firm's P/HRDS and the payroll data system, how much staff time would be required to add the job title field from the P/HRDS to the UI Wage report which is generated from the payroll system?

7. If your NCUI 101 report is not automated, how much staff time would you estimate would be required to manually code a job title to the report, if appropriate space is provided on the form?

8. Would you be willing to share with us the job titles which your firm uses to describe the work your employees do? Are these job titles backed up by job descriptions or some other documentation?

- Department of Commerce; Business Assistance Division
- Governor's Office of Management and Budget (State Data Center)
- Governor's Office of Employment and Training
- Industrial Commission, Office of Research
- Department of Personnel, Office of Salary Survey and Classification

These interviews were broad-ranging and lasted in duration from 30 minutes to several sessions of several hours in the case of interviews with the LMI Division, of the Employment Security Commission.

Because of the nature of the task, no structured interview protocol was thought necessary although topics of utility, cost increases and savings, and technical problems were discussed in each of the interviews.

TECHNICAL DOCUMENT SEARCH

A formal literature search was conducted for documents used in administering the data programs involved, as well as research studies which proposed improvements to LMI data collection in the past. As the result of information received from NOICC, state agency personnel and personal knowledge of the authors, a number of reports and other materials were used to verify procedures and document probable benefits and problems, The Occupational Information System Handbook, Volumes I and II, were used extensively to verify data systems and their capabilities. Other sources are referred to in the text as they are referenced.

SUMMARY

Procedures used in this study included structured interviews with private industry firms and unstructured discussions with state agency office representatives. In addition, technical documents and applicable legislation were consulted to analyze the information and arrive at an essessment of feasibility.

The next section provides a discussion of findings.

III. DISCUSSION OF FINDINGS

INTRODUCTION

The discussion of findings is presented in six sections which address the basic objectives of the study previously mentioned under procedures. These sections are:

- Impact of a new approach on the UI Reporting System
- Voluntary Versus Mandatory Reporting on Employers
- Interviews with Private Industry
- Potential for Consolidation of Employer Reports
- Employer-Provided Job Titles
- Toward a Comprehensive LMI System

IMPACT OF NEW APPROACH ON THE UI REPORTING SYSTEM

Analyzing the impact of the inclusion of occupational titles as part of the North Carolina Unemployment Insurance reporting requirements necessitates, as a first step, a review of what is commonly known as the "UI Reporting System." Quarterly employer reports from all the employer units covered under the North Carolina Employment Security Act form the basis by which unemployment insurance taxes are levied and collected. All functions of the accounting and contributions units within the Unemployment Insurance Division are governed by the need to administer efficiently the revenue (tax) collection system. Thus, data collection needs, from the perspective of UI operations, are directed toward those items which have a direct bearing upon the collection of money (UI taxes) and the disbursement of funds (UI benefits).

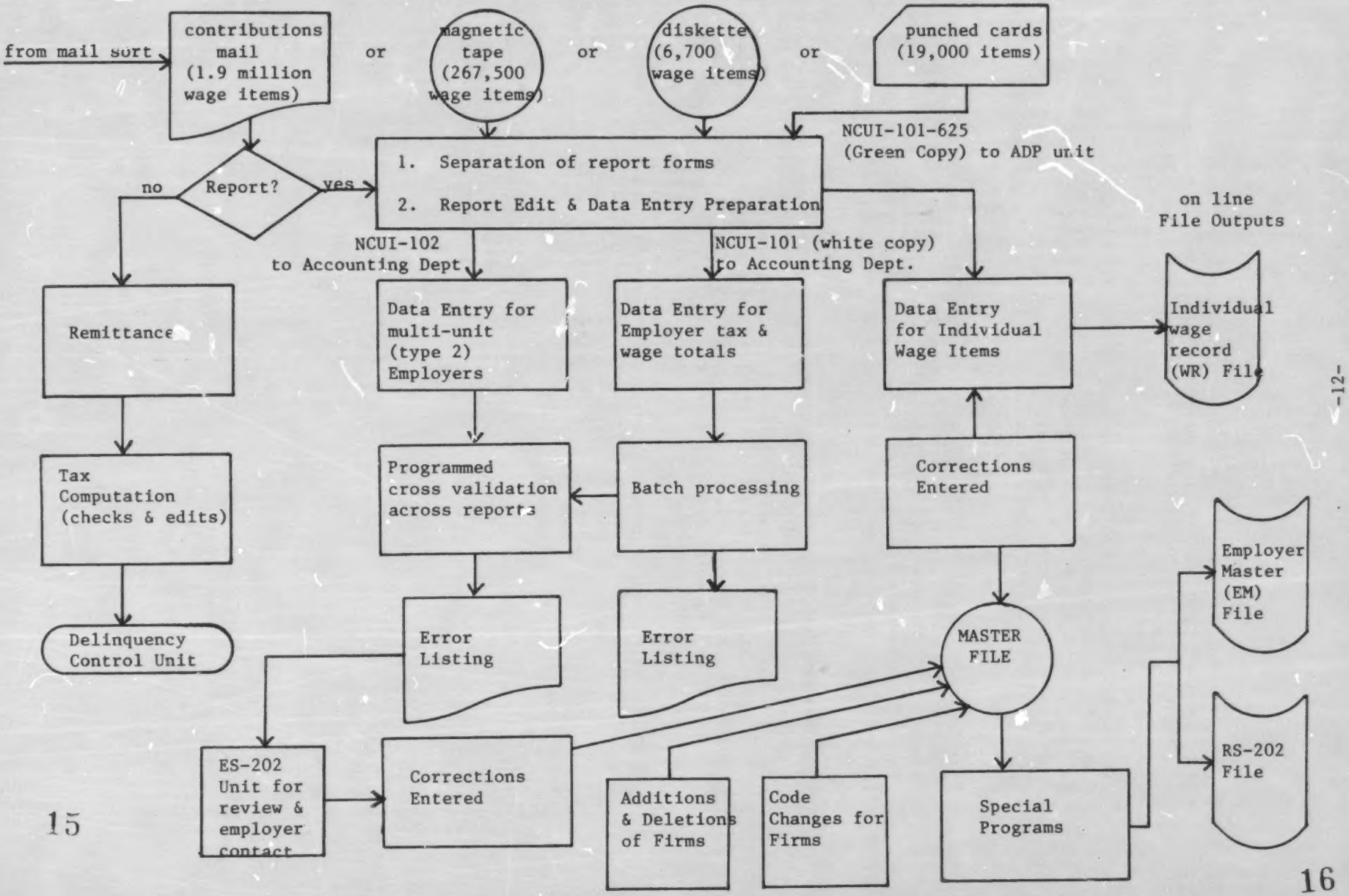
The basic tax reporting forms used in North Carolina, Forms NCUI-101 and 102, provide basic information on which employer UI contributions are assessed. The bottom portion of the NCUI-101 report (called the NCUI-625 Wage Report) also provides wage data on individual employees, which is one of the information items used for determination of the eligibility and level of UI benefits for UI claimants. (See Appendix B)

The data system flowchart, with respect to input, processing, and output of UI reports, is represented in Exhibit II, (following). There are no legal obstacles to mandating reports by occupational titles as part of UI reporting; in fact, the researchers' analysis shows that there might be legal problems in mandating the proposed supplementary data for only a portion of total firms, rather than for all (see pages 27-30).

Florida's draft report on the issue also suggests that there are no legal obstacles and further asks: "But is it really necessary for the UI system?" While there are some monetary benefits to the UI system (and other benefits especially to

EXHIBIT II

DATA FLOW FROM QUARTERLY UNEMPLOYMENT INSURANCE REPORTS



-12-

Employment Service) in terms of providing a responsible benefit eligibility review process and engendering an additional impetus for job search by the claimant, the analysis points out that it is an unattractive prospect for UI.

Wage item reporting by occupational titles is certainly not necessary to the operation of UI. In fact, one could argue that individual wage items are also superfluous. Some 20 percent of the nation's workforce operate adequately under state UI "request reporting" systems which require wage records only after UI claims have been filed. Additionally, North Carolina's experience with the Unemployment Compensation for Federal Employees (UCFE) program in which wage item reporting is not provided by the federal government, suggests that individual wage reporting is not a necessary condition for effective UI operations.

Moreover, it can be asserted that data collected through the UI Reporting System already supports information requirements beyond that which is minimally needed for the administration of the Unemployment Insurance program. For instance, Form NCUI-101 mandates monthly employment data "for the payperiod including the 12th of the month" -- clearly for reasons which would make the data consistent with employment statistics compiled by the U.S. Department of Labor, Bureau of Labor Statistics. Other data requirements, such as county-specific reporting for branch firms also serve statistical programs primarily and have little to do with effective tax collection.

Use of the UI data base to provide a sampling framework for OES and other BLS-sponsored programs is a common practice (for example, for programs such as Area Wage Surveys, Employer Expenditures for Employee Compensation, Employee Benefits Plans, and Current Wage Developments). However, uses of this data base for issues outside the ESC purview are rare and are usually discouraged.

The current JTPA legislation, not only supports but also mandates the consolidation of reporting requirements to provide information which is deemed necessary by state authorities reponsible for statewide program operations. It becomes "fair game" to look over each state and federal reporting program and assess it from the larger perspective of its potential to enhance the total system. Rather then merely abiding by the narrow limits of what "administrative" data can "spin-off," it asks for cost-efficient approaches at total systems information needs.

Looking at the flowchart, one can see that the primary impact of the new reporting requirement would affect ADP operations, rather than UI accounting operations. This is because the NCUI-625 Wage Report, which will carry the new data items, is keypunched at a later date by ADP personnel. Summary data on employment, wages and UI contributions from Forms NCUI-101 and 102 are processed as soon as they are received in order to insure early validation of UI tax estimates to go along with prompt deposits of UI contribution checks.

Addition of an average of 20 characters per record[9] for occupational titles would increase the keypunching resources required for UI wage record data entry by 67 percent, based on a current record length of about 30 characters (employer account number, employee name, social security number and wages). Based on a total

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[9]Although employer-provided listings of job titles from their automated personnel system averaged about 30 characters in length manually entered occupational titles are expected to be significantly shorter (about 15 to 20 characters in length).

of 15 keypunchers dedicated to the task of data entry of wage items, we estimate an additional 8-10 staff will need to be added unless a technological breakthrough in optical scanning devices appears on the horizon. (Using 1981 Data Entry Management Association productivity figures of 11,106 Keystrokes/hour national average, eight additional Keypunch operators would be needed for the 20-character additional workload).

In North Carolina, the legislation to require employees to report occupational titles would primarily affect Form NCUI-625 which is the bottom half of the Form NCUI-101 and is submitted in two copies. Since NCUI-625 is processed at a later date than NCUI-101, and at a different physical site than the UI Accounting Department, there would be little or no effect on UI activities for report processing. Since the Individual Wage Record is already in a variable record length format, little reprogramming of the entry procedures is required. Consideration should be given, however, to separating the NCUI-625 Form from the NCUI-101 Form. Total record length, including the occupational titles would be around 65 characters, so that form redesign is also minimal.

Exception Reporting

In combination with exception reporting, an interesting scenario develops. Exception reporting permits the employer to change only those wage item data which are actually different than found in the previous quarter. A "shuttle" form is used in which dropped elements are crossed out and changes noted.

To analyze its impact on the reporting system, it is necessary to note the characteristics of a randomly-selected set of wage records and find out what part and proportion of the data elements change over adjacent quarters. Using the Colorado sample of 1,417 cases of wage items tracked over time as a parallel, the following impact on the Employment Security Commission and on employers can be traced. Summary findings from Exhibit III, on the page following, are as follows:

(1) Implementation of reporting on occupational title using the NCUI-625 form will require 67 percent additional reporting burden to ESC and employers during the first quarter.

(2) After the first quarter, with exception reporting, burden decreases by 15.4 percent for ESC and by 22.5 percent for employers (compared with the current system in use at present).

Obviously, the characteristics of the set of wage records should be traced for North Carolina. If the analysis holds, implementation will require 25 keypunchers for one quarter and then requirements will decrease to 12.7 FTE positions after that.

There is really no need for data to be stored in active (on-line) storage devices. Off-line data storage on tape will be sufficient for prompt statistical analysis of data, after good software is developed.

IMPACT OF EXCEPTION REPORTING SYSTEM
ON NCUI-625 CURRENT VS. PROPOSED
(with addition of occupational titles)

Old Quarter vs. New Quarter Record	# of Records[1]	ESC Keystrokes Needed		Manual Employer Characters Entered	
		Present Wage Record[2]	Proposed UI Title[3]	Present Wage Record	Proposed UI Title
1. Same salary & title for both quarters	82	2,460	0	2,460	0
2. Different salary in each quarter					
a) same job title	751	22,530	11,265[4]	22,530	4,506[7]
b) different job title	23	690	805[5]	690	598[8]
3. No entry for 2nd quarter (assumed terminated)	265	0	2,385[6]	0	0
4. No entry in 1st quarter (assumed new hire)	296	8,880	14,800	8,800	14,800
TOTAL	1,417	34,560	29,255	25,680	19,902
Percent Change from current system			-15.4%		-22.5%

[1] assumes Colorado experience in change in wage record items by quarter.
[2] assumes 30 characters total: 15 for name, 9 for SSN, 6 for wage (account number is duped).
[3] assumes 20-character occupational titles for manually reporting firms after start-up quarter.
[4] Identifier (9-digit SSN) plus 6-digit wage data needs to be keyed in for each record.
[5] Identifier (9-digit SSN) plus 6-digit wage data plus 20-digit title needs to be keyed in.
[6] Identifier (9-digit SSN) needs to be keyed in for deletion of other elements.
[7] Employer "lines out" old wage data and replaces it with 6-digit new wage data.
[8] Employer replaces wage and occupational data.

Emphasis should be placed, instead, upon good software development to address a multiplicity of user needs. Current systems using the Employment Service Potential or Continuous Wage and Benefit History Programs as parallels indicate that there is a lot to be desired related to the efficiency of computer programs which have been developed.

VOLUNTARY VERSUS MANDATORY REPORTING BY EMPLOYERS

Introduction

An immediate question to be considered is whether occupational titles from firms should be collected on a voluntary versus a mandatory basis. Related to this issue is whether the data should be collected from all employers or for a portion (or sample) of the firms. There appear to be only a few options available here: (1) reporting should be mandatory for all firms; (2) mandatory for some firms; or (3) voluntary for all. The following provides a discussion of each of these options.

Discussion of Options

Option (2) should be automatically eliminated from consideration because firms have to be treated equally under the law. Although firms which have the automated capability of appending their occupational titles to the UI Tax Report can more easily report the data than non-automated firms, they cannot be singled out for a mandatory reporting provision on the mere reasoning that it costs them less to comply. Some corporations do respond to mandatory reports which include occupational breakouts for programs such as Equal Employment Opportunity (EEOC), Federal Contract Compliance (OFCCP), and the like. However, such mandatory reporting provisions relate to the special status of the firm from which they may receive special treatment and benefits from the government.

It is also not feasible to use size-of-firm as the one criterion for mandated reporting. To single out firms of 250 workers or over, for example, for mandatory reporting on occupational detail by individual worker does not also automatically guarantee that all of these firms can easily provide the information. (For instance, there was one major firm in Raleigh in the interviewed sample which, because of its organizational structure, could not provide accurate and consistent occupational data and did not have a computerized personnel system, in spite of having 600 employees.)

In considering option (3) (voluntary for all), two issues are crucial: (1) Should the data which are being asked from firms voluntarily be appended to a mandatory reporting system, and (2) Can statistically valid data be produced from reports which are received on "a catch-as-catch-can" basis, rather than from probability-based sample (where target firms are identified, a priori)?

The response to the first question is "probably not," because of at least two compelling reasons. One, is that a fair amount of confusion on the part of respondent firms might ensue, causing a higher rate of delinquency reporting for UI tax collection purposes. Secondly, if only a small number of firms would respond, it would have placed an unnecessary burden on data entry, storage, and processing within the UI Division for a function which, like other survey programs,

could have been done independently and at a different schedule. Certain UI data base files, like the ES-202 and the employer listing, could still be accessible for use in the survey process.

Moreover, data collection from an unspecified sample has severe statistical problems. If responses were received from a sample which is not probability-based, estimates of the sampling error would not be possible. The alternatives are really simple: either get as close to the universe as possible (i.e., full response on a certain item), or rely on a probability-based sample where the firms targeted for response are determined beforehand, following prescribed sampling ratios. Ideally, the percentage of responding firms should exceed established minimum levels and nonrespondents should also be pursued and examined for possible bias. It would also be good to rotate the firms in the sample systematically, so that the same firms are not burdened continuously, and reporting bias would be diminished.

Summary

Option (1), mandatory reporting for all, seems to be the direction of choice. However, it has major drawbacks if no corresponding reduction in employer reporting burden occurs with the additional requirements of occupational title reporting.

The potential for consolidation is discussed in the next section.

Effective public relations efforts might succeed in convincing nearly the entire group of employers that such reporting requirement is for the public good and benefits everyone eventually. But even a very small group of openly hostile and vocal firms could effectively stop the proposal.

The apparent solution to this delimma is to find the reporting structure and procedure which would be supportable by employers and which contain the following attributes:

1) Data is intuitively valuable, and collection can be proven to be cost-beneficial.

2) Some benefit to reporting firms is received in return.

3) Response problems are not excessive, and,

4) Data collection procedures, and the use of the data for its intended purpose can be supported by current resources and technology.

PRIVATE INDUSTRY INTERVIEWS

Introduction

A structured set of questions, introduced in Exhibit I above, were used to obtain responses from employers regarding their capabilities to respond to the data collection approach under consideration. These questions are listed again below followed by a summarization of the responses obtained from the firms interviewed.

For each question, the responses are compared to those obtained in a previous set of interviews with Colorado firms during October, 1981. This study, of which these interviews were a part, was previously discussed above in Section I, Related Studies and Developments.

Interview Responses

1. How many requests for employment wage data would you estimate that your company responds to over a year's time? (These would include requests for information about the numbers and types of jobs your firm currently has, the number and types of jobs for which you hire regularly, the wages paid for selected jobs, the expected growth/outlook for selected jobs, numbers of persons by sex and ethnic status you have in different types of jobs.)

Most interviewed were not able to document the exact number of requests for employment data which their firm received. Many expressed the belief that not all requests for data were fielded by them and their staff. Therefore, not all requests would come to their attention. However, most of those interviewed stated that they and their staff personally responded to many requests each year from a wide variety of federal, state and local agencies and other firms.

This response was nearly identical to that received by the authors in the Colorado Study.

2. How much time would you estimate that it took to complete the OES survey for your firm?

Many did not recall having completed the OES survey. Of those who could find a copy in their files or who recalled the survey, a wide range of time was reported from over 10 days in one firm to as little as a few hours in several other firms. The amount of care which went into the survey was also reflected in the amount of time that was spent in filling out the survey. A time of two to three hours of effort was assumed based upon the interviews for most of the firms. This corresponded closely with the Colorado responses.

3. Are you aware that your firm is covered under the state's unemployment insurance program and that a report is submitted quarterly which reports, by social security number, each worker's quarterly wages paid?

All interviewed were aware of the UI reporting requirements and its purpose. In several cases, the report was prepared by a corporate payroll office off-site in another state. However, in all cases, this off-site processing of the report seemed to present no real problem, for the approach under consideration because the full data base was located at the preparation site, but was accessable at the interview work site; the Colorado responses were identical except that several of the Colorado firms felt that off-site processing would cause some problems because the entire data base was not present at the processing site.

4. Is the UI report (referred to in question 3) an automated report? Is it submitted by magnetic tape; if not automated, could we review one of your NCUI 101 manual reports?

In all but two cases the UI report was automated. In the two cases, these were firms which were smaller and did not possess automated capability within their personnel offices. The firms were happy to share their NCUI 101 reports and to discuss the procedures which went into their processing.

Of those firms which had automated report capability all but one submitted the report via magnetic tape. This was close to the responses for Colorado.

5. Does your firm operate an automated personnel/human resources data system (P/HRDS)? Does it contain detailed job titles? Can a request for a report of all job titles by SSN be responded to: if the respondent replied "No" to this question, question 7 was then asked.

In all but two cases the firms operated automated personnel systems. Job titles were detailed and the capability existed to obtain the employee job title. However, in several cases, the system did not store the actual job title as part of the master personnel record. Instead, a job code was stored thus necessitating an additional step, using a job title "look-up table", before an employee job title could be produced from the automated system. This would require an additional programming step in those firms if the proposed approach would be implemented requiring addition of occupational titles to the UI report. This problem was not uncovered during the Colorado interviews.

6. Based upon your knowledge of your firm's P/HRDS and the payroll data system, how much staff time would be required to add the job field from the P/HRDS to the UI Wage report which is generated from the payroll system?

In all but two of the firms, the amount of time necessary was estimated to be less than one person/week. This response was somewhat higher than the estimates in Colorado. However, upon reflection these estimates seem closer to the probable real situation. Most firms had designed their P/HRDS Systems and their payroll systems by use of integrated data management concepts whereby data are addressed and retrieved from a large file of data rather than from partitioned segments belonging to individual systems. As an aside, the fact that job titles are updated by personnel action forms in most of the personnel systems, means that job title changes, once a computer program is written, would also be included in subsequent reports without additional staff effort.

7. If your NCUI 101 report is not automated, how much staff time would you estimate would be required annually to enter a job title on the report, if appropriate space is provided on the form?

As with Colorado interviews for the two firms who fell into this category, the amount of time projected by the interviewees was roughly proportional to the number of employees on the payroll. This is the case because of the amount of manual preparation necessary to prepare the initial submission. From the North Carolina and Colorado interviews, the amount of additional time for the first report might be approximately five minutes per employer. For subsequent reports, the amount of time would be approximately one-fourth that time.

8. Would you be willing to share with us the job titles which your firm uses to describe the work your employees do? Are these job titles backed up by job descriptions or some other documentation?

In all cases, the firms were willing to share their titles for use in the AUTOSOC experiment. This question was not asked in the Colorado study because no such experiment was part of that study.

Summary

In almost every instance, the interview responses with North Carolina firms matched those with the Colorado firms. The extent of automation among large firms was extensive as well as the extent to which detailed job titles were available in automated medium and readily accessible to the payroll function. Although, not a specific area of inquiry, the firms seemed to have little reticence about sharing the job titles which their firm used. In most cases, the job title structure was well defined and backed up by job descriptions.

POTENTIAL FOR CONSOLIDATION OF EMPLOYER REPORTS

The Colorado Proposal for Consolidation of Employer Reporting

The previous study conducted in Colorado showed that potential for consolidation of employer reporting, using the UI reporting system, exists for several reporting programs. A test of a consolidated system, using a common form has been initiated by the Colorado SOICC, with strong support from JTPA offices, Vocational Education, and several private industry associations.

The Colorado "test" proposal is included in Appendix C. In this proposal, a sample of 300-400 employers are asked to report on a consolidated form their usual responses to three programs, Unemployment Insurance, Workmen's Compensation, and Occupational Employment Statistics. Using the consolidated form, the staff will test the feasibility of serving the independent reporting requirements of each of the three systems by producing a machine-generated output for each of these systems to replicate reports which would have been reported directly from employers. A detailed assessment of the actual system impact of report consolidation is proposed.

The study will also entail an assessment of the feasibility if instituting "exception" reporting procedures whereby reporting items which remain unchanged from the previous reporting period would be left untouched. This procedure is expected to use a "shuttle" form which contains the previous quarter's reports and is transmitted back to the employer for either updating and replacement (whichever is easier to use). This method is expected to produce significant savings both in manual reporting entry for small employers and in keypunching of data into the consolidated reporting system.

A fourth reporting system which has a good potential for incorporating into the UI reporting system is the withholding for State Personal Income Taxes. California, in particular uses a single form to record and process personal income tax withholding concurrently with unemployment insurance tax collection.[10] Colorado

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[10] Postle, W., Austin, D.M., and Quong, C. An Investigation Into the Feasibility of an Employment Information System Based Upon the ES-202 Reporting System. U.S. Department of Labor and Lawrence Berkeley Laboratory, Feb. 1976, p. 17.

has started only recently to look into this potential of consolidating reports across the Department of State Revenue and Unemployment Insurance. Although this potential represents possibly the largest savings to a consolidated system, the fact that each reporting system is solidly in place, and performs efficiently within its defined scope of interest, mitigates against non-legislated efforts at consolidation.

The addition of otherwise voluntary reporting items to a mandated reporting system, moreover, represents a two-fold threat to any mandated reporting system: Firstly, it exposes that reporting system to potential re-examination and legislative reauthorization. Secondly, according to one interview, it is being "required to compromise a system which is working well to shore up a reporting program which is floundering" and has no legislative basis.[11] Although it can be argued that non-mandated (survey) systems contribute positively to the public good in relation to their costs, it is recommended that a consolidated approach to data collection not be attempted unless the proposed system can be legislated.

Application to the North Carolina Office of State Personnel

The North Carolina Office of State Personnel administers a wage comparability survey among volunteer firms to determine salary and classification structures for use in state government. The state pay plan is administered over a total of some 2,500 job classifications.

The task of analyzing some 82,000 raw position descriptions from 140 state and local state jurisdictions which file pay plans and classifying these positions into the standard job classification titles is extremely time consuming and takes up most of the 3 FTE positions allocated to the unit. Since is is impossible to survey for all the state classified titles, the titles are further clustered into 125 "benchmark" classes from which composite pay changes for the classified job titles within each group are determined.

Not all of the 125 benchmark classes are surveyed each year and only a statewide scale, unadjusted for regional differences, is produced. Data exchanges with some 15 other states are conducted. In addition, the unit responds to a total of about 70 requests for wage survey data per year.

Availability of occupational title and general wage data from the proposed system was judged to help the implementation of the pay survey in the following ways:

1. Using the current stock of volunteer firms and their occupational and wage structure, firm-specific matching of employer job titles to the standard Department of Personnel classification could be set up, processed, and automated for continued future use.

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[11] Since mandated reporting systems are generally linked to revenue collection, sanctions and penalties usually apply to non-reporting and late reporting. There is a legal questions, therefore, of the imposition of penalties for firms who claim that additional reporting items have caused the delay in reports.

2. The available data base reflects a much larger population which would permit easier identification of firms to target for the survey effort, better indication of the range of jobs within a classification, and the determination of more appropriate "weights" to use on sample wage data.

3. Techniques to produce regional data could be developed. For example, the median wage rate of workers in a specific occupation could be compared across regions in the state.

4. More resources from State Personnel could be allocated for analysis of job tasks, fringe benefits, and other concerns which heretofore have been devoted to survey administration.

5. The State Personnel survey could be linked to the ESC wage survey and provide more comprehensive and timely information. One of the chief complaints about wage surveys conducted by state government is that the data reported is not current and is of little use to private industry. Use of a more current data base and special software to produce timely estimates and reports could alleviate this problem.

Application to the North Carolina Industrial Commission

The Workmen's Compensation Division in North Carolina, unlike some states, does not administer a State Fund for Workmen's Compensation purposes. Instead, private insurance carriers write insurance policies to cover job-related worker deaths and disabilities. Private sector firms with less than four regularly employed workers are exempt from the law requiring insurance coverage. Nonetheless, some 100,000 private firms (out of a potential 108,000) are insured by a total of 300 insurance carriers. About 95 percent of the insurance business is handled by 25 insurance carriers.

The North Carolina Industrial Commission services mainly an adjudication role when there are disputes regarding service or coverage from insurance companies. Insurance premiums are typically experience-modified for firms which have been in existence for some length of time.

Actuarial data used for rate-making purposes are collected by the Compensation Rate Bureau which is a private agency funded by contributions from insurance companies. While other states which administer a State Fund for Workmen's Compensation and gather occupational employment and wage figures for some 600 titles, the Compensation Rate Bureau in North Carolina collects data for only two or three occupational codes which apply to the insured workplace.

North Carolina also allows employers to be self-insured. There are 600 such firms. Since these are typically the largest firms, they hire over ten percent of the total workforce. For these self-insured firms, an annual report is required on employment and wage figures by occupational classification. This report is certified by a CPA and a 1.6 percent "premium" tax is collected by Workmen's Compensation.

The North Carolina Industrial Commission would have little use for data in the form of occupational titles by wage item. However, 600 of the large firms are self-insured and submit occupational data. This number of firms represents over half the

total of firms with 250 or more workers. The approach under study would aid reporting of occupational titles by wage item for both Workmen's Compensation and the proposed system, and thus negate duplicate reporting for the 600 largest firms in North Carolina.

Impact on Consolidation and Paperwork Reduction Mandate

The impact of the proposed recommendation upon consolidation efforts is significant:

1. Follow-up efforts undertaken by education and training agencies will be significantly reduced and replaced by a more efficient system which produes more reliable data. Any direct survey effort which is directed at program completers and employers can be virtually eliminated.

2. Job openings survey, now authorized under the Job Training Partnership Act (Section 462.a) can be facilitated. As many as 6,000 firms can be included in the job openings survey if such a survey were to take place. Innovative use of the proposed data base will render the job openings survey to be unnecessary.

3. UI Benefit Payment History Record. North Carolina maintains a UI benefit payment history file on each claimant which records benefit payments made to the claimant during the period of the claim. The benefit payment history record complements the claimant's record to present a more complete picture of the claimant's wage history. Uses of the claimant's wage record includes a verification of the continuing eligibility to receive UI benefits. Further, claimant's occupational employment and earnings history can be used as the basis for review of continued eligibility under the Eligibility Review Program (ERP), and as the basis for new placement efforts.

4. Employer Relations Program. In promoting employment and training opportunities for Employment Service applicants, employer relations representatives make personal contact with employers to solicit job orders. Most of these contacts have been usually limited to larger firms that have personnel departments.

Federal guidelines suggest a review of the employer's history of job orders and eliciting more information from the employer on the job openings and hiring trends of the firm. Occupational hires data, by firm, can minimize the amount of time spent per employer visit. Moreover, computerized preparation of records for use in employer visits and expanded contracts for the job development efforts can be supported by innovative use of the data base. In this context, job development staff from JTPA and Vocational Education can also be aided by the data.

5. The ES-202 unit spends a large portion of its time in tracking down employment totals for multi-establishment firms and appropriately allocating these to individual establishments. Three types of letters are sent out by the UI computer program to employers who have failed to complete the employer and/or wage items on their tax forms or whose responses failed programs used for data edit.

The proposed data system which will require wage item reporting might help resolve some of the problems encountered in "out-of-balance" accounts where the

individual reports do not add up to the consolidated total. This might also simplify the procedures for making adjustments to employer's branch reported data. Employer contacts by letter and telephone could decrease somewhat.

6. The Labor Market Information Program will experience a major breakthrough. There is widespread consensus among LMI staff that the proposal will open up new dimensions for research if the technical and political problems of implementation can be resolved. Such new areas of research which can open up include issues such as migration, effects of wage changes upon labor supply and demand, career ladders, and dynamic characteristics of the labor force and the workplace (employers).

7. Knowledge of new and emerging occupations, which is now hindered by staff reductions in Regional Occupational Analysis Field Centers would be possible. In general, more emphasis, now devoted to survey administration and data collection, could be redirected to occupational analysis, research, and user-oriented production of services.

8. Timely updates of Career Information System files, including salary updates, could be implemented. Personnel system salary surveys would be diminished.

SUMMARY

The implementation of the "UI/Occupational Title" approach to occupational data collection can be more effectively pursued if it is incorporated within a broader approach which provides for consolidation of employer reports to the State Government. In this context, the already implemented consolidation of UI and State Personal Income Tax Withholding system in California and other states should be studied, as well as the approach under study in Colorado. In addition, application to the State Department of Personnel and to Workman's Compensation reporting are also important considerations which favor a serious look at consolidation of reporting systems.

In the final analysis, legislation such as the JTPA and the 1980 Federal Paperwork Reduction Act provide a mandate for relieving employers of the burden of duplicative reporting. Should the state of North Carolina pursue the consolidation of employer reporting requirements, the business community would probably be favorably disposed to cooperate in efforts to achieve a comprehensive and consolidated LMI system for the state.

EMPLOYER-PROVIDED JOB TITLES

The information base needed for building today's industrial society, through better planning for education and training programs requires two major elements; the first major element is an operationally-related and precise classification of workers by occupation. The second element is a comprehensive, longitudinal worker file to enable assessment of worker flows to analysis of local labor market dynamics. These elements are discussed in more detail below.

Need for Operationally-Related Classification Structures

Occupational data are essential for many types of labor force analysis involving occupational and geographic mobility, wage rates, and socio-economic studies. The

information base is further used in an operational context for planning education and training programs, and assisting those in the process of career search. Likewise, in the determination and monitoring of continued eligiblity for Unemployment Insurance and Social Security Disability compensation, knowledge of labor market conditions and worker requirements are crucial. Such information when used by individuals for job search activities and for making career choices can also be justifiably counted upon to lower the duration of unemployment for those persons.

A recent NOICC report[12] listed over fifty federal agencies which collect or use occupational data. The two most important programmatic sources of occupational information, Census and OES, have used different approaches for collecting data. Exhibit IV, on the following page, outlines some of these differences.

Because of these differences, there is concensus among most experts that there is virtually no consistency between OES data and historical census information.[13]

Response and coding problems account for some of the difficiencies which exist in both census and OES. A post-censal comparison of occupational classification data coded by census workers versus the respondents themselves showed 56.2 percent mismatch.[14] This does not necessarily translate into an error rate but indicates the magnitude of the problem. OES data, on the other hand, has not been determinately validated. One proposed method of validating OES data suggested comparisons of responses to OES with data collected by occupational analysis field centers for matched establishments.

Nevertheless, the biggest problem with the OES approach is the use of the structured questionnaire which is limited to a maximum of 200 predefined codes along with space for employers to add additional titles. Many big firms possess many more than 200 titles. It is not uncommon for large firms, for instance, to use suffixes indicating department or work station along with other key words to describe the worker's job title (see Exhibit V). The person usually filling out the OES questionnaires in larger firms is the junior clerk in the personnel or accounting section. The task to properly classify hundreds of employer titles (about which the respondent is only vaguely familiar) and allocate these across the 200 OES codes or fill in the titles for which there are no codes can be simply overwhelming (see Appendix D for sample OES questionnaire)

Beside response and coding-related problems, a much larger problem for data collection methods is the classification structure, itself. One of the criteria which can be used to determine the occupational grouping and the detail of the data is its level of significance, i.e., number of workers represented, its use in analysis, and in determination of policy. In this regard, census data, and detail which represent socio-economic categories, have been much favored by sociologists and historians for the type of analysis they are concerned with. OES detail, on the other hand, focuses on the skill content of occupations as the basis for human resource planning. Different needs require different levels of detail and different alternative groupings.

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[12] A Study of NOICC-Related Federal Activities, NOICC, 1978.

[13] Feasibility Study for a Project on Improvement of Occupational Information, NOICC, 1979, p. 73.

[14] U.S. Bureau of Census, technical paper 41, 1978, p. 27.

EXHIBIT IV

COMPARISON OF CENSUS AND OES DATA COLLECTION APPROACHES

	CENSUS	OES
1. Respondent Population	Survey of individual households	Survey of employers
2. Reference Date	April 1 each ten years	Tri-annually 12th of April, May or June, depending upon which month shows the least year-to-year seasonal change for the subject industry
3. Geographic Location of employment	Classifies respondents based upon location of household	Classifies respondents based upon place of work
4. Type of Industry	Type of employer is reported by respondent	Uses industrial category for place of work assigned by BLS
5. Uses of occupational definitions versus respondent job titles	Assignment of a single occupational code based upon respondent information	Employer representative assigns occupations of employees using a list of occupational titles and definitions relevant to his industrial activity realizing that one person may have several occupations.
6. Occupational Detail	Approximately 500	Approximately 1,700

LIST OF SUGGESTED TITLE SUFFIXES

Florida
Georgia
North Carolina
South Carolina
Company Headquarters
North Florida
South Florida
Southeast Florida
Atlanta
Accounting
Administrative
Advertising
Annoyance Call Bureau
Assignment
Bell-Independent Relations
BEMARR
Benefits
Budget
Building Construction
Building Design and Construction
Building Operations
Building Planning
Building and Real Estate
Business
Business Office
Business Relations
Business Services
Cashier
Central Office
Centralized Mail Handling
Centralized Mail Remittance
Circuit Provision
Claims
Clerical
Coin Telephone
Collections
Comptrollers
Communication(s)
Community Relations
Connecting Arrangements
Construction
Consumer Relations
Corporate Books
Corporate Planning
Cost Methods
Customer Equipment Systems
Customer Service Analysis
Customer Services
CTI
Data Network Services
Data Services
Data Systems
Defense
Depreciation
Directory
Disbursements
Distribution
Division of Revenues
Educational Relations
Employee Assistance
Employee Information
Employment
Energy
Engineering
Engineering and Network Services
Equipment
Equipment Installation
Executive
Facilities
Facilities Administration
Facility Services
Financial
Food Services
Force Administration
Forecast
Frame
Functional Accounting
Furniture
General Trade Contracts
Government Communications
Human Relations
Information
Installation
Insurance
Inventory and Cost
Inventory Management
Labor Relations
Legal
Marketing
Measurements
Mechanized Systems
Medical
Methods
Microwave
Mobile
Motor Vehicle
Network
Network Administration
Network Design
Network Maintenance
Network Operations
Network Planning
Network Service(s)
Number Services
Operations
Operations Planning
Operator Services
Outside Plant
Peg Count
Personnel
Pioneers
Planning
Public Affairs
Public Relations
Purchasing
Radio and Carrier
Rates
Rates and Revenue
Real Estate
Records Administration
Regulatory Matters
Repair
Reports
Reprographics
Research
Results
Residance
Revenue
Right-of-Way
Sales
Safety
Security
Separations
Service Analysis
Service Costs
Service Evaluation
Service Observing
Service Order
Special Projects
Special Services
Station Systems
Supplies
Switched Services
Switching
Systems
Teller
Toll
Transmission
Treasury
Trunk Facilities
Voice Systems
Western Electic Coordination

A collected set should be flexible enough to accommodate different classification clustering and detail needs. For instance, data for Salary survey and administration should ideally be produced at a different geographic and occupational detail than data for long-term economic projections. Therefore, data collection systems can serve more needs per unit collected if the richness of the detail at the collection source is preserved.

Basically, the Dictionary of Occupational Titles is the cornerstone of the coding "system" and present alternative coding structures are major classification devices which have spun-off the DOT into wide use. Since there is still no established "theory of occupational classification", current structures in use define their composition in terms of other occupational groups or titles they might encompass or relate to, not really in terms of the "occupational" content. Thus, the occupational crosswalk, in the established practice among the states with advanced occupational information systems services only as a first approximation of the possible relationship between coding structures. What eventually evolves for use in planning is a state-specific clustering scheme--actually, another state specific classification system.

All classification systems are ad-hoc structures, created by discussion and compromise among user groups. It is user-defined in practice, but other alternative classification schemes, for other uses, might be just as good. There is therefore, a need to preserve the original data and recode, whenever necessary, to a new structure. Loss of the original data, by structured questionnaires or forcing a coding structure during entry to the computer files, is not only unnecessary but also leads to inaccurate recoding.

Another benefit attributable to preserving the original data is in producing a consistent series over time. The OES system, for instance, is contemplating a change over to a Standard Occupational Classification (SOC) based system. This would lead to problems of non-comparability over time.

Employer-generated occupational titles can provide a way to address the foregoing problems of accurate reporting, consistency (over time), and flexibility. The most important technical issue is accuracy of coding. However, this problem is only a short-term one, which is discussed fully below.

Need for Comprehensive, Longitudinal Worker Files

If making labor force estimates and long-term projections of labor demand were the only issues in occupational information, the current systems in place would be sufficient. However, the current needs for occupational data for issues listed below can be better addressed through individual unit-record based files containing occupational descriptors:

- There is need for follow-up of clients across many state and federal programs. Such follow-up is done for program performance evaluation and program or benefit eligibility and requires data on earnings and occupation.

- There is need for demographic studies of workers, career ladders, and occupational and geographic mobility.

- There is need to monitor EEO practices, and hiring and promotion policies throughout the job tenure.

- There is need to track new and emerging occupations, as well as, changes in "traditional" worker characteristics in selected occupations.

- There is need to describe pay differentials of workers based on more detail characteristics related to the worker and the workplace.

- There is need to provide more accurate and detailed data base for planning education and training programs.

- There is need to provide detailed information on job openings, turnover, and career and job development potential.

For the kinds of needs described above at the state and sub-state area level, nationally-oriented analysis based on sample surveys are not sufficient. Aside from Social Security, Unemployment Insurance and Federal W-2 wage records, there is no longitudinal file on earnings by individual worker. None of these three data bases contain any kind of occupational data. (Federal Income Tax Form asks for occupational title but does not code the data, using it only for audit purposes.)

On the other hand, there are many surveys conducted within North Carolina by federal, state and local government, as well as the private sector which seeks the answer to many of the issues which could be answered by employer-generated occupational titles by wage item. These voluntary surveys include:

- Occupational pay surveys. Among these are the surveys conducted by State Personnel Department, industry associations, and hundreds of large firms. The basic need is to set wage levels for salary administration and recruiting.

The labor market information section also administers a survey of salaries and fringe benefits for key jobs. The Bureau of Labor Statistics has administered surveys in the following areas:

- Industry Wage Surveys - These surveys provide data for selected occupations to represent employment in the industry surveyed. BLS surveys 50 manufacturing and 20 nonmanufacturing industries accounting for over 22 million employees on a regular, recurring basis. Most are surveyed on a five-year cycle.

- Area Wage Surveys - These surveys provide wage data on 76 occupational categories common to a variety of industries in 70 SMSAs, including 20 for office clerical; 17 for electronic data processing, drafting, and industrial nurses; and 30 for maintenance toolroom, power plant, custodial, and material movement jobs. They provide a representation of the range of duties and responsibilities associated with white-collar, skilled maintenance trades, and other indirect manual jobs. Weekly salaries are reported for straight-time salaried workers, and average hourly wages are reported for hourly workers.

- National Survey of Professional, Administrative, Technical, and Clerical Pay - This survey provides data on salary levels and distribution in private employment of 72 occupational/work levels selected from accounting, legal services, personnel management, engineering chemistry, buying, clerical supervisory, drafting, and clerical. The occupational definitions can be translated to the compensation applying to Federal employees.

- Municipal Government Wage Surveys - These surveys provide wage data for 50 occupations common to many municipal governments. The surveys are designed to be comparable to the Area Wage Surveys of private industry.

- Union Wage Rates - Annual studies of union wage rates and hours are conducted in four industries; building construction, local transit, local trucking, and printing. The program also includes a biennial study of union wage rates for grocery store employees. The rates and hours are based upon the collective bargaining agreements between employers and the various trade unions. The studies are designed to include all local unions representing industries in the selected cities.

The five BLS surveys may also collect data on weekly work schedules, paid holiday/vacation practices, health insurance, and retirement benefits. Surveys of plant workers cover shift operations and their wage differentials. Some surveys collect data on minimum entrance rates for inexperienced office workers. In addition, information on profit-sharing plans, characteristics of sick leave plans, wage payment systems, and other related employee compensation are often provided.

In many instances, employer-generated occupational titles appended to the UI Reporting Forms would replace surveys such as wage-surveys and OES, in addition to consolidating employer reporting and contacts necessary for job development, follow-up, and program performance evaluation.

Given the above consideratons, the following sections examine the potential for processing employer-provided job titles in such a way that they may be used as "proxies" for occupational titles contained in standard occupational classification systems. Should such processing prove to be feasible and valid, the concept of preserving the richness of detail at the collection level may be realized. Further, the possibility of developing occupationally-specific longitudinal worker files may be feasible.

Processing Employer-Provided Job Titles

1. Potential for Automated Crosswalk from Employer-Provided Job titles to standard occupational classification systems.

In November and December 1978, a series of four conferences was convened to discuss collection, classification and utilization of occupational information. The series of discussions culminated in a National Academy of Sciences document "Feasibility Study for a Project on the Improvement of Occupational Information," which was reprinted and distributed by NOICC in December, 1979.

Attending this series of conferences were federal agency experts on occupational information collection and use, the staff of the Commission on Human Resources, and selected invitees from Universities, Institutes and the private sector.

Of the 15 topics discussed, five were highly pertinent to the issue of improving reporting and classification of occupational source data. These topics were:

- Methods of increasing the accuracy of reporting of occupations in future census or surveys.

- Development of new classification tools or improvement in existing tools such as the Alphabetic Index of Industries and Occupations.

- Quarterly control for referred cases (cases the coding clerk cannot code from available information).

- Analysis of costs and benefits of establishing a Job Information System (a Computerized reference system for use in occupational coding that would contain the job title, single sentence or key word description of job, SOC code for job, and SIC codes for industries in which the job occurs).

- Assessment of potential utility of computerized classification of occupations.

The reader is referred to the publication which contains knowledgeable and candid discussion of the technical issues regarding occupational data collection and classification. Several items of note from the discussions are summarized below:

- There was agreement that different users and different agencies will need different levels of disaggregation and that state and local planning activities require more data than is currently available.

- There was mention that there is virtually no compatability between OES data and historial census information and that the use of SOC in the 1980 census will reduce comparability with the 1970 census.

- It was pointed out that there are potentially "thousands of equally good" classification structures, depending upon the use. Convertability from one structure to another is desirable but it is better to have a user-defined classification system that can be constructed by a computer based on the collected data.

- There was discussion on the desirability of computer-assisted coding and remarks on the use of computerized matching based on experiences in Canada, Sweden, and France, and the experience with the Alphabetic Index of Industries and Occupations used in coding operations by the U.S. Bureau of the Census.

- It was pointed out that error in current occupational statistics is not known and that validation efforts are desirable. Further, there should be efforts towards consistency of occupational data over time.

Improvements in occupational information can be made by improving the data source and the coding scheme. Almost certainly computer technology would be beneficial in providing a set of transformation possibilities to the coder and in being able to code similar responses consistently. Retention of the original data source, as well as, the coding transformation produces a circumstance where as more information is known about the data to be coded, recoding to the appropriate codes can be facilitated.

While there is always questions as to whether job titles alone would give enough valid information to enable a coder to do the job, there is about as much information available in the administrative UI data as could be elicited from the census questions (see Exhibit VI following). Further, employer-provided job titles are intuitively more accurate than self-reported census titles.

There is no doubt that some, as yet unknown, percentage of job titles, particularly in the professional and managerial occupations, will not be amendable to computerized coding; however, the desire on the part of employers to use descriptive job titles for supporting their wage and salary administration, EEO, and other personnel programs will probably produce an increasing number of standardized titles between firms within the same industries. This is particularly true of titles in the crafts and trades for which vocational education programs are directed.

It is also necessary to look at the long-range benefits of automated look-up files for occupational coding. Theoretically, employer-specific coding transformation could be defined. Given time, and appropriate feedback from employers (as well as, position descriptions) the employers job titles can be coded accurately once and for all. There is guaranteed improvement in data over time.

2. North Carolina AUTOSOC Experiment

In 1981, through a NOICC grant, Utah developed an automated matching system for SOC coding of job titles. Since Utah is a wage request reporting state, it does not have wage record files on each individual as is the case in wage record reporting states. Utah uses an accession report form (i.e. QPA) which contains name, social security number and occupational title for newly hired employees.

The "new hires" data are normally used for flagging potential welfare and UI fraud cases but there has been a spin-off in the use of the occupational data captured in the reporting form. (See: Utilizing Occupational New Hires Data, Utah, 1978).

Coding "New Hires" data to SOC codes is currently being undertaken in Utah and matching of social security numbers across Vocational Education files on program completers is being accomplished for follow-up purposes.

In the current feasibility study for North Carolina, employer job titles from selected firms in Raleigh/Durham, Charlotte and Winston-Salem were gathered during the interview process.

EXHIBIT VI

Attachment A.—Industry and Occupation Questions used in the 1970 and 1980 Census of Population

1970 census

33–35 Current or most recent job activity

Describe clearly this person's chief job activity or business last week, if any. If he had more than one job, describe the one at which he worked the most hours.

If this person had no job or business last week, give information for last job or business since 1960

33. Industry

a. For whom did he work? *If now on active duty in the Armed Forces, print "AF" and skip to question 37*

(Name of company, business, organization, or other employer)

b. What kind of business or industry was this?

Describe activity at location where employed

(For example, junior high school, retail supermarket, dairy farm, TV and radio service, auto assembly plant, road construction)

c. Is this mainly— *(Fill one circle)*

Manufacturing ■ Retail trade

Wholesale trade Other *(agriculture, construction, service, government, etc.)*

34. Occupation

a. What kind of work was he doing?

(For example, TV repairman, sewing machine operator, spray painter, civil engineer, farm operator, farm hand, junior high English teacher)

b. What were his most important activities or duties?

(For example, Types, keeps account books, files, sells cars, operates printing press, cleans buildings, finishes concrete)

c. What was his job title?

35. Was this person— *(Fill one circle)*

Employee of private company, business, or individual, for wages, salary, or commissions ■

Federal government employee

State government employee

Local government employee *(city, county, etc.)*

Self-employed in own business, professional practice, or farm—

Own business not incorporated

Own business incorporated

Working without pay in family business or farm

1980 census

29–31. Current or most recent job activity

Describe clearly this person's chief job activity or business last week. If this person had more than one job, describe the one at which this person worked the most hours.

If this person had no job or business last week, give information for last job or business since 1968.

29. Industry

a. For whom did this person work? *If now on active duty in the Armed Forces, print "AF" and skip to question 32*

(Name of company, business, organization, or other employer)

b. What kind of business or industry was this?

Describe activity at location where employed

(For example, junior high school, retail supermarket, dairy farm, TV and radio service, auto assembly plant, road construction) ■

c. Is this mainly — *(Fill one circle)*

Manufacturing ■ Retail trade

Wholesale trade Other — *(agriculture, construction, service, government, etc.)*

30. Occupation

a. What kind of work was this person doing?

(For example, TV repair, sewing machine operator, spray painter, civil engineer, farm operator, farm worker, junior high English teacher)

b. What were this person's most important activities or duties? ■

(For example, Types, keeps account books, files, sells cars, operates printing press, cleans buildings, finishes concrete)

31. Was this person — *(Fill one circle)*

Employee of private company, business, or individual, for wages, salary, or commissions

Federal government employee

State government employee

Local government employee *(city, county, etc.)* ■

Self-employed in own business, professional practice, or farm —

Own business not incorporated

Own business incorporated

Working without pay in family business or farm

A 20-percent sample of job titles was compiled. Since the AUTOSOC master file from the "new hires" data was limited to 22-characters in length, job titles over 22 characters in length were excluded. The original limitation of 22-characters was brought about by lack of space in the reporting form. A revised version of AUTOSOC with expanded 50-character record length has recently been developed. Also, an indication was perceived that employers, in a manual reporting mode, would not report lengthy titles but would tend to shorten or abbreviate them. In all, a total of 402 job titles were used in the coding experiment.

The first pass which was attempted in coding the data was a pure computer match. This used some 2,000 SOC-coded individual titles in the AUTOSOC master file (excluding alternative spelling and abbreviations of the same title. e.g., acountant, acct., etc. The 402 job titles in the North Carolina test were entered and a total of 14.4 percent were automatically coded. (see Appendix E). Minimal effort at manual coding produced a total rate of 54 percent successfully SOC-coded. (see Appendix F).

The result is encouraging, considering that there were only 2,000 matched records in the "master file". The "master file" is designed to be "organic" and grow as more data are entered in and matched.

A later test, using the undifferentiated SOC and DOT titles listed in the NOICC/BLS crosswalk was made available on November 5, 1982. About 20,000 unique titles were produced out of these titles in the crosswalk tape and added to the master file. The set of North Carolina job titles totaling 2,079 was matched against the new master file but the incidence of pure title matches did not improve significantly from the first run.

Upon further analysis, the major reason for this was that a preponderance of the job titles collected in North Carolina (from Personnel Information System printouts and Union Contract Agreements) were too long and too specific to allow for "pure" matches to the master file. On the other hand, use of such descriptive titles facilitated manual look-up and coding. Once coding is implemented adequately for these non-matched titles, the problem is solved for good, since these titles are regularly reported. Further staff validation of the crosswalk can also be done with employers to ensure more accurate coding over time.

Possible augmentation of the master file can be accomplished if the Bureau of the Census file, Alphabetical Index of Industries and Occupations or of the Alphabetical Index of Occupations (listed in the SOC manual) can be secured on computer tape. Another potential source of records which could be added to the Master File are state Job Orders records. In some states, (e.g. Utah), ES staff actually input the employer-provided occupational title (as well as DOT or SOC) to a job order listing. This produces an automatic source from which new additions to the Master File could arise.

It is, of course, important to distinguish between the percentage of titles which can be crosscoded versus the volume of jobs in the labor market which can be adequately coded. Utah's experiment with their new hires data base shows that over half of the new hires total were concentrated in about 30 of 2,800 occupations.[15]

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[15] Utilizaing Occupational New Hires, Utah Department of Employment Security, February, 1977, p. 5.

Further, the latest Utah master list containing about 35,000 unique titles allowed for coding 42 percent of all new hires data, on a pure computer match.

By concentrating on those job titles in which the predominance of employment occurs, over 75 percent of the employment volume has been satisfactorily coded in Utah. This coding represented some 3,000 unique occupations. A 95% coding success rate (based on employment volume) has been judged to be attainable by Utah technicians working on the AUTOSOC project.

By comparison, the OES data collection method also concentrates on maximizing coding based on employment volume, rather than unique job titles. The questionnaire limitation, allowing only up to 200 predetermined titles, for use in structuring employer response leaves the rest of the titles in an open-ended "residual" category provides clear evidence of the same kind of "targeting based upon volume" within one OES program.

An attractive method to maximize the use of resources for manual coding is to have the computer generate a frequency distribution of the different uncoded titles encountered in the data base. This would give a perspective in terms of the total volume of jobs (not job titles) which the codes could set as a target. It would permit setting priorities for which titles ought to be coded first and the effort of coding (implied accurancy) associated with it.

The following actions can significantly improve AUTOSOC coding with a minimum amount of additional AUTOSOC enhancement:

- Compile as large a master file as possible, acquiring the Alphabetical Index from census as well as, the Canadian list.

- Edit the master list for potential error and augment software to accomodate abbreviations, alternative spelling, etc.

- Start with easy titles to code and with titles which are more frequently used. Prioritize remaining titles in terms of necessity to be coded.

- Plan validation effort based on contacting employers to ask if "this occupational description roughly describes what the person in this job does."

Obviously, 100 percent coding certainty and accuracy will be impossible to achieve; however, AUTOSOC provides other important benefits:

- It will be possible to incorporate data from surveys such as "area skill surveys" into the master file.

- The approach can be used to compile the "residual" job titles out of the OES surveys.

- New and emerging occupations can be identified.

- Recoding to fit ad-hoc classification structures from original data can be produced.

Summary

Collection of Employer-provided job titles provides an alternative method of obtaining occupational data to that used in the census or the OES programs. The approach provides the capability to readily match the data to various occupational classification schemes depending upon the use to which the data is envisioned. Further, when coupled with a unit record collection system (i.e., the UI Individual Wage Record), the employer-generated titles can provide a source of continuous longitudinal worker activity which can provide a comprehensive LMI system capable of supporting myriad employment and training and other planning functions necessary in any state.

The technical problem of actually converting employer-generated titles to various classification systems is being addressed for one such classification scheme (i.e. SOC) via the AUTOSOC project being conducted by the Utah Job Service. Use of the AUTOSOC software and limited analyst intervention, demonstrated that 54% of the sample of titles collected from North Carolina firms could be accurately converted to SOC. Further work to enhance the AUTOSOC software by more sophisticated programming and the addition of more titles to the master file can significantly improve the accuracy and volume of pure computer matches which are feasible, thus reducing the amount of analyst intervention necessary to provide accurate data. Prior to any implementation effort in North Carolina, these AUTOSOC enhancements must be effected.

TOWARD A COMPREHENSIVE LMI SYSTEM

Introduction

The foregoing discussion of findings, coupled with the implied requirements for a "unit-record-based" LMI system to support the recent JTPA legislative mandate, leads one to suggest that the approach under study, should be considered as a next logical step in the expansion of the Department of Labor's Employment Service Potential (ESP) program. Should such an expansion take the form of enhancing the UI data base by addition of occupational titles, a comprehensive LMI system can be described. Such a system could be implemented under the North Carolina LMI Oversight Committee's auspices given a continuing committment of personnal and funding.

Under such a system, a productive merging of LMI data needs with Unemployment Insurance, Employment Service, and Job Training Partnership Agencies can finally take place. Heretofore, program operations staff have tended to discount the internal use of LMI to foster program efficiency and effective planning and have tended to view LMI as serving solely public information needs. On the other hand, LMI staff have traditionally been disappointed about the low priority given to LMI data needs. In recognizing that a more deliberate and comprehensive approach to an information system can lend to internal agency efficiency and productivity gains as well as serve the public good, a more complete integration of functions and goals can be accomplished.

Capabilities of an Enhanced LMI System

Much of what could be done under the proposed approach is reflected by what is now possible through the North Carolina Employment Service Potential (ESP) Program, albeit with additional occupation data. The ESP program uses longitudinal analysis of UI tax records and crossmatches them with internal administrative data, such as ESARS and the Claimant File. ESP data has been used in LMI research, program performance evaluation, job development and planning. A historical analysis of "wage items" from UI records is conducted. From these records, successive quarters of wage history can be examined on the basis of definitions directly attributed to what is produced by the data base.[16] The following is defined and used for analytical purposes.

1. accession: when an employer submits employee's "wage item" in a given quarter but did not submit it in the preceeding quarter.

2. separation: when an employer submits employee's "wage item" in a given quarter but not in the succeeding quarter.

3. recall: the accession of an employee for whom a "wage item" was submitted by the employer in at least one of the first three of the last four preceding quarters.

4. new hire: the accession of an employee who has not worked for the firm during any of the last four quarters.

5. recent entrant: a new hire who has not been employed by any establishment during the last eleven quarters preceding the hire.

6. temporary hire: a new hire who remains with the employer less than three quarters and earned more than $100 total for the quarters(s).

7. short-time hire: a temporary hire who earned less than $100 total for the quarter(s).

In addition, ESP calculates the employment level for the firm (and the industry) for the beginning of the quarter by subtracting the total accessions from its total wage items during the quarter. The ESP program is also able to distinguish the volume of hiring from newly-created and recurring jobs versus the volume of hiring to fill vacancies created by recent separation (i.e., replacements). In contrast, the OES program projects job opportunities due to growth of the total industry (not the firm) and "replacement" or attrition due only the workers dropping out of the labor force (not turnover).

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[16] Employment Service Potential, California Employment Development Department, September, 1977, pp. 46-62.

The technique by which ESP produces such statistics is by defining, as the basis of its methodology, that "the volume of replacement hires is equal to the number of accessions needed to maintain the establishments employment at a steady level. Of course, it can only identify the volume of the replacement hire and not whether any particular job has been filled for replacement versus new growth. (The proposed enhancement would provide this differentiation.)

The following ESP statistics are calculated:

1. Volume of replacement hires - equals the lesser of either the firms accessions or separations.

If accessions are greater than separations, only part of the firm's accessions are for replacement purposes (based upon the number of accessions to maintain a steady employment level). On the other hand, if separations are greater than accessions, every accession may be for replacement.

2. Volume of new job opportunities - accessions above the number required to maintain a steady level of employment which results from firm expansion and seasonal rises in business.

3. Annual job opportunities - the annual net increase in a firm's employment level calculated from the same month four quarters earlier.

4. Industry job opportunity - the weighted average of the rates for individual establishments within the industry. (This can also be applied to any aggregation by firm size, location, firm age, etc.)

Under the present ESP program, ESP data affords additional insights into labor force dynamics: they can be used to measure how long hires last, they can isolate sectors which provide stable employment and good wages, and they can be used to track labor market experience of new entrants and training program completors. With the additional occupational dimension, the ESP program would be substantially more powerful. "Penetration rates" by occupation could be developed for all education and training programs. This would help planning and operations. A multi-dimensional "accession matrix" could be constructed which would provide estimates (or projections) of hiring activity by industry, occupation, size of firm, and other characteristics of the workplace. By linking into other data bases (such as Voc. Ed. MIS/VEDS, JTPA MIS, Social Security, ESARS Applicant File, and UI Claimant File), containing worker characteristics (demographic, economic, and education attributes), a similar matrix could be created which would reflect estimates of the potential for being hired.

Potential querying capabilities for enhancing job development efforts can also be developed. For instance, a listing of employers which keys on specific characteristics (for example, a listing of employers in the Raleigh area who have the greatest potential of hiring maintenance mechanics at wages greater than $8.00 per hour) is possible. While firm-specific hiring characteristics is valuable, it would also be possible to do a detailed analysis of the characteristics of firms who hire completers from education and training programs. Job development and placement strategies could be shaped by the findings which should also include a look at the turnover rates, length of hire, wage rates, and incidence of transfers (in the

same occupation).[17]

Uses of the longitudinal data file, especially as it is linked with other administrative files, would be greater for follow-up and program performance evaluation. However, follow-up procedures using the UI data base for setting up a wage history would still have some gaps, not because of lack of occupational detail, but because paid quarterly wages from the data base do not allow well-paying jobs for part of the quarter to be distinguished from poorly compensated full-time jobs. Also, dual or multiple job holding cannot be distinguished from a succession of jobs within the quarter. (The State of Utah is circumventing this short-coming by also requiring "wage rate" for all new hires reported by employers.) Tracking of the client through seccessive quarters can be produced but the quarterly wage data as reported cannot provide a definite answer to wage "progression" and increases in "hourly" wage rates (which is one of the performance standards suggested by the Job Training Partnership Act). Therefore, there is need to look at both hiring wage rate and date of hire as additional pieces of information which could be sought.

Date of hire data can also be used for fraud detection and other benefit control issues. Crossmatching UI, General Assistance, Food Stamp, and Supplemental Security Income (SSI) and other benefit recipients with the UI wage record containing date of hire would screen for potential overpayment and fraud cases. Use of the date of hire would also indicate those few cases where, due to technical reasons, (such as length of pay period, problems in payroll processing, relocation by employee prior to receipt of wage, etc.) wages were earned towards the end of one quarter but paid in the next. During 1981, President Reagan created the President's Council on Integrity and Efficiency in Government. A major thrust of this Commission's program is embodied in the "Computer Matching Project" which encorporates the concepts discussed above.[18]

In theory, given the date of hire, the wage rate, and quarterly wage items, measurement of savings to the government in terms of reduced transfer payments and increased tax revenue (directly from the wage-recipient and from the additional flow of income created through consumption) is possible.

Measurement of program participants' "successful work experience" can be more readily compared against a control group of non-program participants. Comparisons across a wider variety of outcomes would be possible. Such comparisons of outcomes for program participants and the control group could include:

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[17]For instance, firms with less than 100 employees produce 80 percent of the new jobs, while they make up only 45 percent of total employment (see Monthly Labor Review, September 1982). Should these be the firms primarily targeted for job development efforts? A closer look at the data is warranted.

[18]Haendler, F.J. "New Computer Matching Project Aims to Shoot Down Fraud and Overpayment", Government Data Systems, November-December, 1981, pages 24-25.

1. Measurement of pre- and post-employment and wages. It would be possible to compare not only total wages but also wage rates. Potential annual earnings could also be compared.

2. Duration of employment. Given the quarterly wages, wage rate and date of hire, a more determinate duration of employment could be calculated.

3. Job changes leading to higher wage rates. While a shorter duration of employment and an intervening claim for unemployment insurance are usually considered negative outcomes, the incidence of job changes leading to higher wage rates may indicate better job market performance.

4. Training-related placement. This outcome can be determined from the proposed data base. Moreover, it would be possible to query the data base to find out the answer to a question such as: "How many quarters does it take to achieve a (variable) 50 percent placement rate in a training-related occupation after completion?" Duration of the follow-up effort should be set up to answer this type of question. Depending upon the type of training program, one might find that because of factors like seasonality of hiring, equipment (capitalization) requirements for the occupation, and attachment to a previous job, follow-up conducted after a standard 90-day period might not do justice to the proper evaluation of performance of certain programs.[19]

In short, more comprehensive occupational demand and supply data will be possible under this approach. There is still a lot that needs to be understood about the dynamic characteristics of occupational supply and demand that the current "snap-shot" mode of analysis cannot provide. Looking at the information potential of a comprehensive longitudinal data base, many of the LMI issues currently neglected, can be addressed. On the Labor demand side, local area statistics can be produced keying on job openings, new hires and rehires. More importantly, on the labor supply side, new knowledge of interarea and inter-occupation mobility, career ladders, turnover, tenure, and wage rates can be provided.

Limitations of the Enhanced System

Notwithstanding the described advantages of the proposed LMI data base, substantial problems and data gaps still exist. A few of these are described below:

1. First, it must be understood that only a portion (albeit a significant one) of the labor force is being measured. Only the "external" labor market dynamics are addressed, for instance. Internal promotions, and job shifts which can trigger job openings within a firm are not fully accounted for: the data base will not be able to show which job opening led to whose promotion by unit record. But all

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[19] Hiring rates by industry and occupation were founded to be markedly different across quarters. Presumably, occupational training should be designed to allow graduates to hit the job market at the best moment. (See Employment Service Potential, Employment Development Department, State of California, 1977, p. 105).

accessions will be fully accounted for. These are not necessarily "entry level" jobs, but jobs which are open to entry from the outside and which are the focus of training and placement.

2. Hires statistics are a little different from "job openings."[20] Job openings might include jobs which are never filled or which are retracted or redefined. Accession statistics reflect only filled job openings. Also, wage rates advertised in listing for job openings may not be the final wage at which the hiring transaction takes place.

3. UI coverage in North Carolina extends to about 96 percent of non-agricultural workers. Mandated quarterly reports are submitted by employers of one or more workers with coverage expanding, over the recent years, to non-profit institutions, state hospitals, local and state government, and a large segment of agriculture and domestic household workers.

Among the non-covered groups are part of agriculture and domestic household workers, religious and charitable organizations, interstate railroads, family workers, and the self-employed. While UI coverage is extensive, wage reporting by wage item is not necessarily produced for all firms. A certain number of "delinquent" firms, especially among the small, newly established firms fail to initiate wage reporting in a timely manner. In addition, the federal section, unlike other covered firms, submit summary computer tabulations but do not send data by wage item. Unless the submission of wage item reporting for the federal sector is accomplished, this sector would be missing from any analysis which focuses on individual wage records.

While federal government employment is covered under a separate Unemployment Insurance program, with separate funding, unemployment compensation claims for this group is processed by the state UI system. In effect, wage request reporting procedures are followed in processing UI claims, i.e., summary tabulations are submitted but wage data are obtained from the employer only when needed to establish a UI claim for a former worker. This lessens the paperwork considerably.

It also opens up a large question: If the UI system works so well with, in effect, a request reporting system, why isn't the entire system treated similarly? Unless it can be shown that the reporting system is serving other federal and state programs, in addition to the efficient management of the unemployment insurance system, the rationale for wage reporting system falls apart.

Since the reporting system does serve purposes other than administration of the UI system, and because it has the potential (as suggested by the President's Council on Efficiency and Productivity in Government) of becoming the backbone for consolidated information needs, its total potential for addressing wider needs should be investiaged. This investigation should include looking into the feasibility of wage item reporting for the federal sector.

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[20] Under a directive from Congress, BLS undertook a feasibility study to collect job openings data for the states and regions. Estimates for the program which would involve a sample of 4,000-6,000 firms per state ranged between $25-30 million. The study showed that the task was feasible but expensive and consequently, the program was not funded.

4. The proper focus of wage history analysis is on wage items at the establishment level. In most cases, the analysis deals with single-establishment firms where proper industry and county codes could be assigned. In a few cases, however, multi-unit firms could be reporting workers in the county in which the parent office is located or be reporting under a primary industry code for the major worksite (rather than for the primary activity in each branch).

These problems are usually addressed by the ES-202 unit in the labor market information section. Employment totals reported by the parent office in the consolidated NCUI-101 form are compared to branch operation reports which are submitted in form NCUI-102. Where discrepancies arise in the summed-up totals versus the reported aggregate employment, employers are contacted and/or allocation of employment totals to each branch is re-entered.

A major problem which exists is that multi-establishment firms are required to submit wage item reports only for the consolidated statewide report, rather than for each branch or for branches within each county. Consequently, wage items would not reflect specifically the location, size, or industry of the employer at the worksite. Work history analysis would, therefore, fail at the establishment level where the hiring actually takes place.

The actual extent to which wage records cannot be assigned to the county of employment is hard to determine because of the presence of firms which submit wage item reports by branch but are not technically required to do so. As of a recent count, there were 8,637 separate branches which are identified in North Carolina. This represents about eight (8) percent of the total reporting units in the state but as much as 32 percent of private sector firms which have employment of ten or more workers. A reasonable estimate for the portion of total wage items for which no county-specific detail can be compiled is about 15 percent. (this takes into account the fact that federal employment is not reported by wage item and that some multi-unit establishments do report, voluntarily, by wage item for each of their branches.)

Improvements in multi-establishment reporting would help the ES-202 program immensely, as it would make it easier to tabulate the ES-202 report and eliminate an almost quarterly contact with some employers. The most frequent cause of ES-202 error, other than from non-reporting, are corrections made on consolidated reports from multi-establishment firms which are not fully "allocated" to the establishment (branch) level. While it is easy to cross-check employment levels, other data items on the report (such as SIC and location) are harder to check without involving an employer contact.

Reporting done at an establishment level, by wage item, would resolve the major problem with the ES-202 program, as well as provide a more comprehensive establishment level data base for wage history analysis. Uses of the ES-202 data in North Carolina are described as follows:[21]

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[21] ES-202 Report Preparation Guide and Users Manual, N.C. Employment Security Commission, Labor Market Information Division, pp. 1-2.

(1) serves as the sampling frame for such establishment surveys as

(a) the Industry Wage Surveys

(b) the Current Employment Statistic Program

(c) the Occupational Employment Statistics Survey and Projections Program

(d) the Occupational Safety and Health Statistics Program

(e) Hiring Benefits Study

In some of the above programs the ES-202 data are used as benchmarks for developing "universe" employment levels by industry.

(2) serves as the base for conducting actuarial research involving relationships between total wages and taxable wages, coverage changes, tax rate structure revisions, income forecasts under various economic situations, etc.

(3) services as the basis for determining the maximum and minimum weekly benefit amounts paid to Unemployment Insurance claimants.

(4) used by the N.C. Industrial Commission to adjust benefit levels for recipients of Workman's Compensation.

(5) used by the N.C. Department of Administration in making economic forecasts for the State.

(6) used in calculations of "on" and "off" indicators for extended unemployment benefits programs (EB).

(7) used as input to Continuous Wage and Benefit History (CWBH) research program.

(8) used as basic industry employment data for the local Area Unemployment Statistics (LAUS) program.

(9) used by the N.C. Department of Commerce in administering state government revenue bond legislation to assure that firms benefiting from state bonds are paying wages to equal to or better than their particular industry.

Summary

From the foregoing list of current uses of the UI ES-202 Report and the capabilities of the ESP project, which capitalizes on the use of UI files, it is clear that the UI system is already being used extensively for LMI purposes. The approach being studied would further enhance the UI data base thus producing a comprehensive LMI system which would substantially improve the state's capability to plan and administer the use of public funds for a wide range of purposes.

IV. RECOMMENDATIONS

Introduction

The reasons for arriving at recommended strategies for enhancing the occupational information program in North Carolina are discussed in the following section. These recommendations have been shaped by the technical constraints related to data collection, storage, and processing, as well as by political and legal considerations regarding the collection mechanism. The basic questions addressed is, "How can the current data needs for policy determination, planning and program evaluation be effectively addressed through more efficient use of current resources?" Pragmatic considerations have been considered. The suggestions which are laid out complement, rather than replace, current programs, providing a good basis for future enhancement of the total LMI system.

Each of the recommendations are listed below. In the following section, each recommendation is repeated followed by a discussion of the rationale underlying the recommendation. The following recommendations are suggested based upon the findings discussed in Section III:

1. Request enabling legislation which would authorize and fund the supporting additional research and development for a consolidated employer reporting requirement and an accompanying state processing and delivery system for employment data.

2. Amend UI reporting legislation to include a mandate for reporting wage items (Social Security Number, Name and Quarterly Wages) at the establishment or branch level. Investigate feasibility of obtaining federal civilian sector reports at the establishment level, by wage item (for federal civilian workers who are not in security sensitive installations).

3. Research should be coordinated with related research and developments being undertaken in other locations. Involvement of key agencies such as the Bureau of Labor Statistics the National UI office, NOICC, the National Commission on Employment Policy, Federal Office of Management and Budget, and the National Governor's Association should be formally established.

RECOMMENDATIONS AND RATIONALE

RECOMMENDATION #1 - Request enabling legislation which would authorize and fund the supporting additional research and development for a consolidated employer reporting requirement and an accompanying state processing and delivery system for employment data.

Within the context of legislation such as the JTPA and the 1980 Federal Paperwork Reduction Act, there is a good prospect for acquiring necessary management and planning data, as well as, for relieving employers of duplicative and unnecessary reporting. Much of this work should entail consolidation of mandated employer reporting systems in North Carolina, such as the Employer Quarterly Tax and Wage Report, the State Income Tax Withholding Report and the Workman's Compensation Report (as it applies to large self-insured firms). In addition, non-mandated reports (surveys) currently submitted by employers can be significantly curtailed effectively reducing the total reporting burden for the business community.

Consideration of automated technology to relieve reporting burden, such as by using an "exception" reporting system should also be studied.

Other areas of consideration include development of standardized reporting forms and the use of a centralized reporting and processing center and staff.

With respect to North Carolina's UI Reporting System, the suggested study should take into consideration anticipated redesign of the system and computer hardware changes. Consideration of a centralized state computing center would facilitate the prospects of consolidation between UI Reporting and reporting for State Income Tax Withholding. Testing of exception reporting potential and the prospect for consolidation of reporting for State UI and Income Tax Withholding purposes should be done at a minimum. This endeavor should take place within the purview of the newly-established Labor Market Information Oversight Committee and be fully authorized by legislation.

In pursuing data elements which lead toward a comprehensive occupational information system, it should be noted that the intent of the Job Training Partnership Act is to give the state a free hand in devising "cost-effective methods for obtaining such data as is necessary" to carry out the law. Use of automated technology combining or consolidating information reporting requirements, and standardizing administrative records are some of the ways in which the Act directs the state towards that end. The Bureau of Labor Statistics serves the role of ensuring that minimum Federal Standards are met but it is clearly the State's option to determine how information development should be carried out. The state has to assure that efficient and effective criteria for information development are met; but, depending upon the value which the state places upon such information and the political and monetary costs of collecting such data, the state can decide upon that system which best constitutes information which is "responsive to the economic demand and education and training supply support needs of the state and areas within the state."

RECOMMENDATION #2 - Amend UI reporting legislation to include a mandate for reporting wage items (Social Security Number, Name and Quarterly Wages) at the establishment or branch level. Investigate feasibility of obtaining federal civilian sector reports at the establishment level, by wage item (for federal civilian workers who are not in security sensitive installations).

Multi-establishment employers are permitted to report all their wage items on a consolidated form, submitting only summary employment and wage tabulations for each county or worksite. It has been observed, however, that large firms are capable of reporting by discrete establishment and that, for their own benefit, they usually keep separate records by unit. Many firms already report wage items by branch.

Full reporting at the establishment level would immensely support the production of local area statistical detail adding a geographical and branch indicator to the worker's wage record, rather than using the central office account identification codes.

Wage item reporting for federal installations would expand the data base so that federal employment is considered as much a part of the labor force (for which

detailed analysis can be made) as the nonfederal sector. Special treatment of the federal sector, especially since the capability exists, does not appear to be warranted in view of the employment potential that sector presents.

RECOMMENDATION #3 - Research should be coordinated with related research and developments being undertaken in certain key states. Involvement of the Bureau of Labor Statistics, NOICC, OMB, UI, and National Commission on Employment Policy, and National Governors' Association should be formally established.

As with any large and encompassing effort, there is much to be gained from looking at the experience of other states which have incorporated smaller pieces of the system. With respect to the design and use of a UI reporting form which incorporates occupational titles, the Virgin Island experience would be of help. Of course, the California experience in consolidation of UI Reporting with State Income Tax Withholding would shed light on another issue. Accession (new hires and rehires) reporting experience from Utah now includes additional elements which could be of significant value to program evaluation under JPTA and to wage surveys conducted under both public and private auspices. These additional data elements (in addition to occupational title) are date of hire, and hourly wage rate.

The use of date of hire as a data element would greatly simplify the task of screening other state administrative files (UI Claimant File, Social Services, etc.) for duplication. In addition, the use of hourly wage rates would make the data more amenable to use for program evaluation, and wage comparability analysis. Certainly, the collection of expanded data focusing on new hires, rather than for the total work force, represents a significant reduction of employer response burden. Utah's experience with this new reporting system should be monitored by North Carolina.

Likewise, the continuing enhancement of automated occupational classification coding technology which is being done by Utah should be monitored for its potential use in the North Carolina environment. At the very least, additional experiments with automated conversion of North Carolina job titles should continue.

Although the JPTA clearly allows each state to define and develop a responsive labor market and occupational information system within certain constraints, more meaningful dialogue with federal agencies, such as the BLS, UI National Office, NOICC, and entities like the National Governor's Association and National Commission for Employment Policy should take place. At the very least, state information development roles vis-a-vis these agencies should be constructively defined.

APPENDICES

APPENDIX A

UTAH DEPARTMENT OF EMPLOYMENT SECURITY

1234 South Main Street, P.O. Box 11800, Salt Lake City, Utah 84147

EMPLOYER'S QUARTERLY REPORT OF PAYROLL ACCESSIONS

18-3279-12345
COMPANY NAME
123 NAME STREET
CITY, STATE ZIP

Information requested on this report is needed for control of benefit payments to Public Assistance and Unemployment Insurance recipients.

Please list all persons who during this quarter started or resumed working for you. Include all persons newly hired, rehired, or recalled from layoff, and persons returned to work after a strike. Also list the Social Security numbers and job titles.

EMPLOYEE NAME (Surname followed by initials)	SOCIAL SECURITY NUMBER	DATE WORK STARTED	JOB TITLE

If more space is needed, attach additional sheets

APPENDIX A

EMPLOYER'S UTAH REGISTRATION NUMBER

QTR | YR

DUE DATE

JOB SERVICE

Utah Department
of Employment Security
1234 South Main Street
P.O. Box 11800
Salt Lake City, Utah 84147

R | D

BUSINESS HAS CHANGED COMPLETE CARD 3-58

EMPLOYER'S CONTRIBUTION REPORT

	1st MO	2nd MO	3rd MO
1 INDICATE NO. OF EMPLOYEES FOR THE PAY PERIOD WHICH INCLUDES THE 12th OF THE MONTH			

2 NO. OF NEW HIRES DURING THIS QUARTER

3 TOTAL WAGES PAID DURING QUARTER (ROUND TO NEAREST DOLLAR) $

4 WAGES IN EXCESS OF $ $

5 WAGES SUBJECT TO CONTRIBUTIONS $

6 CONTRIBUTION RATE

7 CONTRIBUTION DUE $

8 INTEREST $

9 PENALTY (MINIMUM PENALTY $2.50) $

10

11 TOTAL PAYMENT DUE $

I CERTIFY THAT THIS REPORT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE

SIGNED TITLE DATE

FORM 3 REV 1 IC

EMPLOYER'S UTAH REGISTRATION NUMBER

QTR | YR

DUE DATE

JOB SERVICE

Utah Department
of Employment Security
1234 South Main Street
P.O. Box 11800
Salt Lake City, Utah 84147

R | D

BUSINESS HAS CHANGED COMPLETE CARD 3-58

EMPLOYER'S CONTRIBUTION REPORT

1 INDICATE NO. OF EMPLOYEES FOR THE PAY PERIOD WHICH INCLUDES THE 12th OF THE MONTH | 1st MO | 2nd MO | 3rd MO |

2 NO. OF NEW HIRES DURING THIS QUARTER

3 TOTAL WAGES PAID DURING QUARTER (ROUND TO NEAREST DOLLAR) $

4 WAGES IN EXCESS OF $ $

5 WAGES SUBJECT TO CONTRIBUTIONS $

6 CONTRIBUTION RATE

7 CONTRIBUTION DUE $

8 INTEREST $

9 PENALTY (MINIMUM PENALTY $2.50) $

10

11 TOTAL PAYMENT DUE $

I CERTIFY THAT THIS REPORT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE

SIGNED TITLE DATE

FORM 3 REV 1 IC

PLEASE USE THIS COPY FOR YOUR FILES

SEE REVERSE SIDE FOR INSTRUCTIONS

EMPLOYER'S UTAH REGISTRATION NUMBER

QTR | YR

DUE DATE

WAGE LIST AND REPORT OF HIRES AND REHIRES

FOLLOW INSTRUCTIONS BELOW. SUBMIT ALONG WITH QUARTERLY CONTRIBUTION REPORT

1 EMPLOYEE SOC. SEC. NO.	2 EMPLOYEE NAME	3 GROSS WAGES	4 DATE HIRED	5 HOURLY RATE	6 JOB TITLE

FORM 3-HI REV 1 80

EMPLOYER'S UTAH REGISTRATION NUMBER

QTR | YR

EMPLOYER'S FEDERAL IDENTIFICATION NUMBER

IF MISSING OR INCORRECT ENTER CORRECT NUMBER

SHOW BELOW ANY CHANGES IN YOUR BUSINESS.

- ☐ NEW NAME OR ADDRESS _____
- ☐ CLOSED WITH NO SUCCESSOR EFFECTIVE _____
- ☐ NO LONGER HAVE EMPLOYEES IN UTAH.
  DATE OF LAST EMPLOYMENT IN UTAH _____
- ☐ ACCOUNT SHOULD BE CLOSED _____
- ☐ OWNERSHIP CHANGED EFFECTIVE _____
  NEW OWNERSHIP _____
  TRADE NAME OF BUSINESS _____
  ADDRESS _____

_____% OF BUSINESS ASSETS SOLD OR TRANSFERRED

Are there included in Item 3 Total Wages, any bonuses or lump sum payments for a period of [illegible] ☐ Yes ☐ No

If payment was made From _____ 19__ to _____ 19__

Amount of bonus or lump sum payment $

Do you pay your employees on a bi-weekly payroll? If yes, complete schedule below

SCHEDULE OF BI-WEEKLY PAYROLLS

PAY PERIOD ENDING DATE	DATE PAID	AMOUNT OF BI-WEEKLY PAYROLL
		$
		$
		$
		$
		$
		$
		$
TOTAL OF BI-WEEKLY PAYROLLS		$
ADD: WAGES OTHER THAN BI-WEEKLY WAGES, IF ANY.		$
TOTAL WAGES		$

FORM 3 SE REV 1 80

BONUSES, COMMISSIONS, and other wages paid for a period of service of more than three months may make the total payroll for the quarter in which these payments are made higher than other quarters. The decline in total payroll for the following quarter may increase the contribution rate. The decline caused by making such payments can be eliminated by properly reporting the amount of the payments and the period of service for which they were paid. The payments are then apportioned equally, for experience rating purposes, to the four quarters of the year in which they are paid. Only payments made for a period of service of more than three months should be shown.

BI-WEEKLY PAY PERIODS may cause a variation in the total payroll from one quarter to the next. If wages are paid bi-weekly (every two weeks) there will normally be seven pay periods in one quarter and six pay periods in the next quarter.

If properly identified, the payroll for the seventh pay period will then be apportioned equally to the four quarters of the year in which it was paid, thus eliminating the variation caused by the timing of the pay period.

1 EMPLOYEE SOC. SEC. NO.	2 EMPLOYEE NAME	3 GROSS WAGES	4 DATE HIRED	5 HOURLY RATE	6 JOB TITLE

Add continuation sheet if necessary.

APPENDIX A

1. Enter the number of full, part-time and intermittent employees who performed remunerated services for you during the pay period including the twelfth of the month, except those specifically exempted in the Utah Employment Security Act.
2. Enter the number of hires, full or part-time, who came to you seeking employment. Exclude call backs.
3. Report total gross wages before deductions. Include all payments of any value, cash, bonuses, commissions, meals, [illegible] gifts, tips.
4. Enter total excess wages paid this quarter. "Excess wages" means the amount paid to each employee after his or her year to date earnings exceeded the maximum taxable wage, as shown on the report form.
5. Subtract item 4 from item 3. Enter as the amount subject to contributions.
6. This is your contribution rate computed according to the provisions of the Utah Employment Security Act.
7. Multiply wages subject to contributions (item 5) by your contribution rate (item 6). Enter the contribution due.
8. If your contribution payment is late, compute and enter interest due. The interest rate is one percent (.01) per month [illegible] of a month that the payment is late.
9. Compute and enter penalty due if report is late. The penalty is a percentage of item 7, and depends on the number of days the report is late. If 1 to 15 days late, the penalty is five percent (.05). If 16 to 30 days late, the penalty is ten percent (.10). If 31 to 45 days late, the penalty is fifteen percent (.15). If 46 to 60 days late, the penalty is twenty percent (.20). If more than 60 days late, the penalty is twenty five percent (.25).
10. Subtract preprinted credit only to arrive at total due.
11. Make check payable to Utah Unemployment Compensation Fund.

FOR AGENCY USE ONLY
☐ REFUND ☐ DEFICIENCY
TOTAL WAGES
TAXABLE WAGES
CONTRIBUTIONS
INT. & PEN.
TOTAL
REASON
INITIAL
NO.
#
##

ORIGINAL

EMPLOYMENT SECURITY COMMISSION
OF NORTH CAROLINA
P.O. BOX 25903
RALEIGH, N.C. 27611

Form NCUI 101

RETURN WITH GREEN COPY AND REMITTANCE

EMPLOYER'S QUARTERLY TAX AND WAGE REPORT

FED. EMP. IDENT. NO.	QUARTER ENDING	ACCOUNT NUMBER
NAME AND ADDRESS		% TAX RATE
		DUE DATE

IF ANY CHANGES SHOULD BE MADE IN YOUR NAME, TELEPHONE NUMBER OR ADDRESS, CAPABLE TO BE MADE IN THE SPACE PROVIDED, THIS PART ONLY

1. NUMBER OF COVERED WORKERS ON YOUR PAYROLL FOR THE PAY PERIOD INCLUDING THE 12TH OF THE MONTH.	1ST. MO.	2ND. MO.	3RD. MO.

2. WAGES PAID IN THIS QUARTER FOR EMPLOYMENT SUBJECT TO THE LAW $

3. LESS: WAGES PAID THIS QUARTER IN EXCESS OF $6000 PER WORKER THIS YEAR. $

4. WAGES SUBJECT TO TAX $

5. TAX DUE FOR THIS QUARTER $

6. CREDIT MEMOS $

7. INTEREST (.005 PER MONTH AFTER DUE DATE) $

8. PENALTY - LATE FILING (.05 OF LINE 5 FOR EACH MONTH MAX .25 MIN. $5.00) $

9. PENALTY - LATE PAYMENT (.10 OF LINE 5 - MIN. $5.00) $

10. TOTAL DUE (ATTACH CHECK OR M.O. PAYABLE TO EMP. SEC. COMMISSION) $

IMPORTANT: Enter Social Security Number for Each Employee

11. SOCIAL SECURITY NUMBER	12. EMPLOYEE'S NAME	13. TOTAL WAGES PAID THIS QUARTER

APPENDIX B

EMPLOYMENT SECURITY COMMISSION OF NORTH CAROLINA
Unemployment Insurance Division
Raleigh, N. C.

NCUI 625 (PSE) (1-73) QUARTERLY REPORT FOR CETA-PSE WORKERS

PSE ONLY

(1) Employer's Name, Address, and ESC Account Number

(2) Date Quarter Ended

(3) Page Number 1 of

Acct. Number

(4) Total PSE Wages Paid In This Quarter $

Total Number of Your PSE Employees During the Payroll Period Including the 12th of Each Month of the Quarter.

1st Mo. 2nd Mo. 3rd Mo.

SUBMIT THIS FORM (AND ANY CONTINUATION SHEETS) WITH YOUR REGULAR QUARTERLY REPORT FORMS NCUI 101/625

92-48-100

Employee's Social Security Account Number (5)	Name of Employee (Type or Print) (6)	Total Wages (7)	Make No Entries In This Column
			SEE INSTRUCTIONS ON REVERSE

(8) Total For This Page (Sum of Wages Shown In Column (7)) $58

APPENDIX C

A Proposal for A FEASIBILITY TEST FOR THE COMBINING OF THE OES, UI AND WORKMAN'S COMPENSATION FUND DATA COLLECTION SYSTEMS

THE PROBLEM

In the present situation, employers are burdened with extensive data requirements. Government has enormous costs associated with data collection, processing, and analysis. Finally, the wide variety of data bases provide a confusing picture of employment and training problems.

PURPOSE OF THE TEST

This is a proposal to develop and test a data collection system which combines the data collection phases of the OES, UI and Workman's Compensation Systems.

Due to present circumstances in government, the number of employers involved and the costs of the test would be minimized to the extent possible while still providing a sound examination of the system. In kind contributions from the participating agencies would be utilized whenever possible.

The combined system project would have seven rules. These are:

1. All data would be collected once and only once unless there is a change in information. For example, name of the employee would only be collected once. In other words, once the name of the employee was entered correctly in the system, it would never be collected from the employer again.

2. Data translations made by the employer would be limited. Most data would come directly from the employer's file in raw form.

3. Only changes would be processed by the government.

4. Only necessary data items would be included in the data reported by the employer.

5. The computer, not the employer, will make most computations.

6. Beyond the data entry system, present government systems would not be changed.

7. The system would be designed so that the withholding tax system could be incorporated in the future if negotiations between UI and Revenue prove fruitful.

INITIAL SUGGESTIONS FOR SYSTEM DESIGN

The ideas presented in this section of the proposal are preliminary in nature. When systems staff from the UI, OES, and Workman's Compensation offices get together for designing the final version to be tested, it is expected that the formats will be refined.

The Form

The form used to collect data from the vast majority of employers should be designed to follow the rules presented above. Necessary basic data elements should be collected which can then be aggregated.

Figure 1 presents a possible form concept. On this form, which is computerized, data from the past quarter data collection effort is preprinted. The employer reviews the form and makes corrections when data has changed. This form may not be complete in terms of all data items but provides the concept.

A review of the principle data items demonstrates the application of the rules.

1. Federal Employer Number. This item should be crosswalked into other items such as Policy Number, Colorado Employer Number, etc. (Colorado Employer Number is also included on the sample as a control although it is not absolutely necessary.)

2. Firm Name and Address. Appears once on the combined form and replaces entries on all three systems.

3. Name of Employee. Appears on the UI form.

4. SSN of the Employee. Appears on the UI form.

5. Occupational Title. This is a proxy for duties of the Workman's Compensation Form and Occupational Title (Federal definition) on the OES form.

6. Quarterly Wages. Appears on the UI form and serves as a proxy for aggregate quarterly wages on the Workman's Compensation form.

7. Non-Salary Benefits. Appears on the Workman's Compensation form.**

8. Premium Wages. Appears on the Workman's Compensation form.**

**Will not be entered if the employer does not participate in the State Workman's Compensation Fund System.

DATA COLLECTION AND FLOW TO PROCESSING POINTS

The following section outlines the details of collecting and processing information for the three systems. Figure 2 provides a graphic description of the system. A center for data entry of UI, Workman's Compensation and OES data is assumed.

Preparation of the Forms by the Center

A computer software package called COM-WRITE drops data from the past quarter file onto computerized forms.

Preparation of Tapes by Employers

Employers prepare a modified version of the present UI tape by unmasking elements of the payroll file such as job title. The modified version is the old record format with new fields added at the end of the record.

Preparation of Forms by the Employer

The employer edits past quarter data by making changes (additions, drops, and modifications). Records that have not changed from the past quarter are not modified. Four examples are provided below:

1. Example of an addition. (John Doe was not employed last quarter.)

SSN	Name	Quarter Wages	-----etc.-----
440-44-2616	John Doe	4800.00	

2. Example of a drop. (John Doe was not employed the current quarter.)

SSN	Name	Quarter Wages	-----etc.-----
440-44-2616	~~John Doe~~	~~4500.00~~	

3. Example of a modification. (John Doe's quarterly wages changed.)

SSN	Name	Quarter Wages	-----etc.-----
440-44-2616	John Doe	~~4500.00~~	
		4800.00	

4. Example of a record that does not change. (John Doe's information does not change.) (The employer makes no entries.)

SSN	Name	Quarter Wages	-----etc.-----
-40-44-2616	John Doe	4500.00	

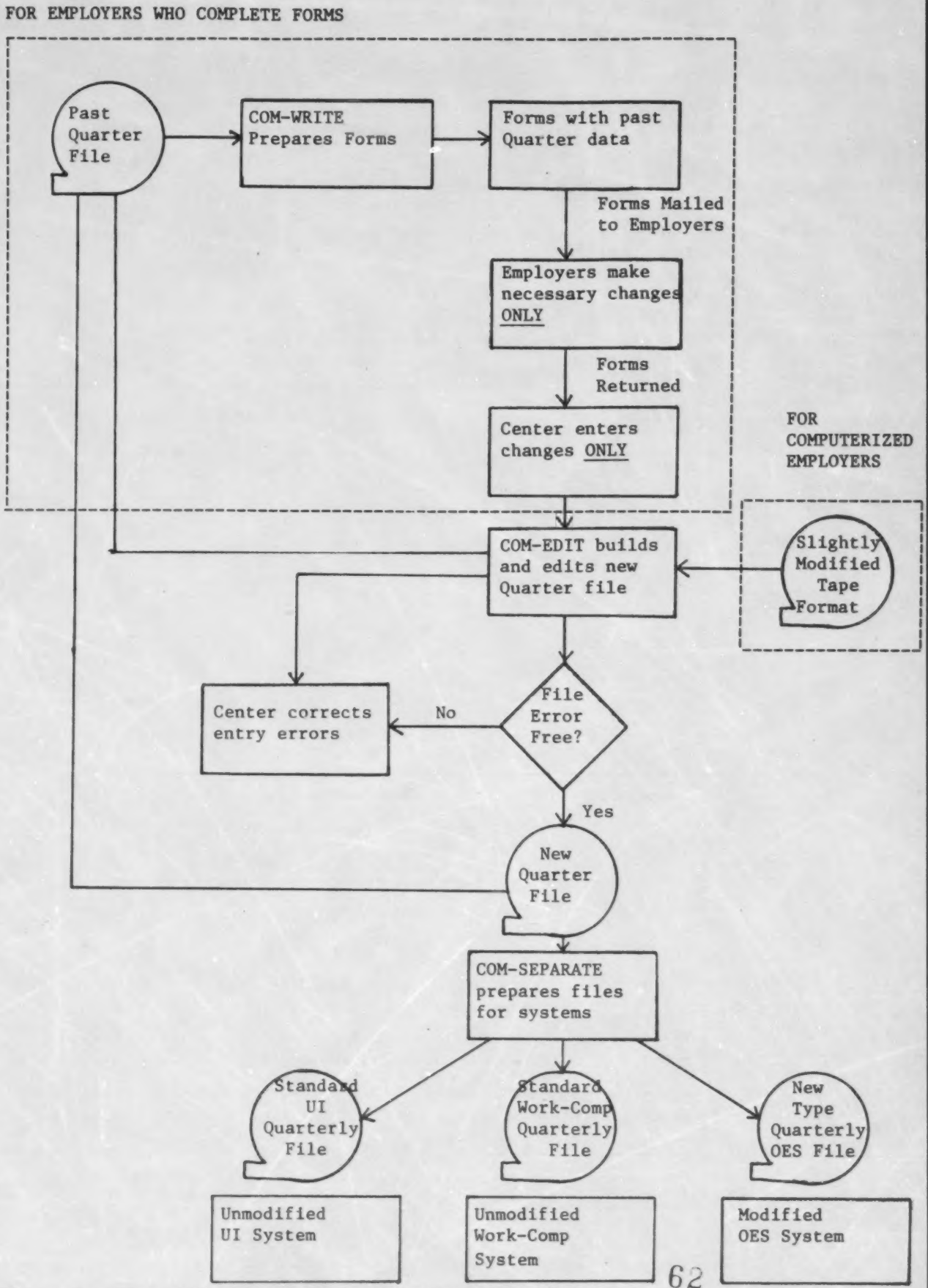

Figure 2. Data collection and flow to processing points.

Data Entry by the Center

The data center enters additions, drops, and modifications only from the forms submitted by employers. Using the examples from the discussion of preparation or forms by the employer, data entered by the center is circled in the examples below.

1. Example of data entered from an addition.

SSN	Name	Quarter Wages	-----etc.-----
440-44-2616	JOHN DOE	4800.00	

2. Example of data entered from a drop.

SSN	Name	Quarter Wages	-----etc.-----
440-44-2616	~~John Doe~~	~~4500.00~~	

3. Example of data entered from a modification.

SSN	Name	Quarter Wages	-----etc.-----
440-44-2616	John Doe	~~4500.00~~	
		4800.00	

4. Example of data entered from a record with no change (no data entered.)

SSN	Name	Quarter Wages	-----etc.-----
440-44-2616	John Doe	4500.00	

Building and Editing the New Quarter File

The old quarter file is compared against the additions, drops and modifications by a software package called COM-EDIT. When an addition is identified, the new data is inserted, when a crop is identified, the old data is removed, when a modification is identified, the old data is replaced and when an old record is not matched with a change, the old record is kept in place. Nonmatching data is listed for a human edit. Other edit features include: (1) a check to determine if SSN is numeric; (2) a check to determine if salary falls into an excepted range and if not; (3) a check to determine if new information is comparable to past quarters, etc.

Developing Files for the Three Systems

The UI file is developed from the New Quarter file by selecting elements from the New Quarter file that were in the present UI file. The data is formated in exactly the same manner as it is presently formated so there will be no system modifications needed beyond the processing point.

The Workman's Compensation file is generated through accumulation (summing all wages with the same class number, etc.) and translation, and is also formated in exactly the same format as is presently used so no systems changes will be needed.

The OES file is developed using a translator from job title to OES title and the employer SIC number from the master file. Accumulation then occurs so the new OES file will be identical to old OES files.

PROCEDURES

The following procedures would be used to develop the details of the combined system and conduct the test.

1. A systems design group consisting of the SOICC Director, a systems person from OES, a systems person from UI, a systems person from Workman's Compensation, a representative from a large private business, and a representative from a small private business, would outline the system and develop a rough format of the data collection instruments. The SOICC Director would perform staff functions.

2. A small sample of employers would be selected on a volunteer basis. All of these employers would be users of the form for data reporting. (Computerized employers would be required to make a one-time change in their system and hence asking them to participate would be tantamount to implementation. These employers will be examined in interviews at a later time.)

3. A professional forms firm will layout and print the computerized forms.

4. Software will be developed to process the new data input into present record formats.

5. The sample employers will initialize the system (Quarter 1: July 1-September 30) and test the system (Quarters 2 and 3: October 1-March 31).

6. The new system will be evaluated by (1) employer opinion; (2) cost to the State; (3) accuracy of data; and (4) data burden.

(Beyond the design point, the SOICC Director will conduct the study and supply UI and Workman's Compensation with standard records for the firms in the sample.) (The design group will monitor the project and help in the evaluation.)

BUDGET

Item	SOICC	Labor	Voc. Ed.	Total	Available Funds
Personnel (with benefits)					
Project Director	18,000			18,000	18,000
UI Design Participant		250		250	
Work-Comp Design Part.		250		250	
OES Design Participant		250		250	
Computer					
Software Development	2,000			2,000	2,000
Computer Time			500	500	
Forms					
Layout			300	300	
Printing			300	300	
Other					
Mailing, phone, supplies, etc.			3,500	3,500	3,500
TOTAL	20,000	750	4,600	25,350	23,500

RELATED COMMENTS

1. The State Board for Comunity Colleges and Occupational Education has implemented two systems similar to the proposed system. Results included better data, reduced data burden and greatly reduced costs in both cases.

2. The Governor's Small Business Council, the Alliance of Business, and the Business/Educational Forum have endorsed the test and/or the concept.

3. Mountain Bell was assigned to examine the proposed systems merger by large firms which are members of the Alliance of Business. They reviewed the ideas and agreed to the system if at least six months lead time is provided. (They schedule systems modifications that far in advance.)

4. Regulatory reform is in agreement with the concept but has not taken a position on this specific proposal.

5. The proposed system could be modified slightly to incorporate the withholding tax system if that opportunity should become realistic in the future.

d1 3/1
(4/8/82)

Occupational Report - 100-0

The information collected on this form by the State agencies cooperating in its statistical programs will be held in confidence and will be used for statistical purposes only.

This report is authorized by law 29 U.S.C. 882. Your voluntary cooperation is needed to make the results of this survey comprehensive, accurate, and timely.

OCCUPATIONAL EMPLOYMENT REPORT FOR THE MINING INDUSTRY, EXCEPT OIL AND GAS EXTRACTION

INDUSTRY DESCRIPTION: Is the industry description label shown at the right appropriate for your establishment? If it does not generally include your unit's major products or service, please describe the correct one:

_____

REPORTING UNIT: Complete this report for your company operation (reporting unit) identified on the mailing label below. The report is requested only for the unit(s) at the physical location printed in the lower ***left*** portion of the label. To help you identify the specific unit(s) requested, our estimate of its total employment is in the lower right corner of the label. (Multi-unit employers may receive more than one questionnaire.)

REPORTING PERIOD: Report employment for a payroll period that includes Oct. 12 80. If, because of ***unusual*** operational problems (other than normal seasonal variations in employment), such as work stoppages, temporary shutdowns, etc., this period is not typical, please report for the pay period in which operations most closely approximate the normal for the month shown and indicate the period selected: _____.

PART I PLEASE COMPLETE THESE FIVE ITEMS:

A. STATUS OF ACTIVITY If the Reporting Unit did not operate under your management during the reporting period, please check the appropriate block below:

(1) ☐ This unit has been sold or merged. New name and address is _____

_____

(2) ☐ This unit is out of business. (3) ☐ Other ***(describe)*** _____

B. TYPE OF OWNERSHIP ***(Please check one of the following)***

(1) ☐ Corporation (2) ☐ Partnership (3) ☐ Sole Proprietorship

(4) ☐ Other ***(explain)*** _____

(Please change if incorrect)

Office Use Only
Status
Auxiliary

C. AUXILIARY UNIT STATUS If the Reporting Unit is *primarily* engaged in performing services for *other* units of your company, please check the one block below that best describes the service performed

(1) ☐ Central administrative office (2) ☐ Research, development, or testing (3) ☐ Storage ***(warehouse)*** (4) ☐ Other ***(specify, e.g., powerplant)*** _____

D. UNIT TOTAL EMPLOYMENT ***(Include full and part-time employees)*** Office Code 999999 Enter the total employment, as defined in the instructions on the following page, of the reporting unit shown on the address label. This figure should equal the employment total on the last page of this report.

If the "Unit Total Employment" shown in the box represents more than one reporting unit, please indicate how many reporting units are included _____.

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E. If questions arise concerning your report, whom should we contact?

Name | Title | City & State | Telephone | Date

_____

Please review the following instructions and occupational list. If you have any questions regarding the reporting unit requested or if the occupational list seems totally incompatible with your work force, please telephone the number indicated in the attached letter.

1. **Enter Unit Total Employment on page one** (Part I, Item D) and employment by occupation on the following pages. Unit Total Employment and the sum of the employees reported should be the same.

UNIT TOTAL EMPLOYMENT:

Includes: Full or part-time paid workers; Workers on *paid* vacations or other types of leave; Workers on *unpaid* short-term absences (i.e., illness, bad weather, temporary layoff, jury duty); Salaried officers, executives and staff of incorporated firms; Employees temporarily assigned to other units; Employees for whom this unit is their permanent (home) duty station, regardless of whether this unit prepares their paycheck.

Excludes: Proprietors, owners and partners of unincorporated firms; Unpaid family workers; Workers on extended leave (i.e., pensioners and members of the armed forces).

2. **Report** all employees in one or another of the listed occupations in Part II. Use the "All Other" categories only when there is no appropriate occupation described. If accurate employment figures are not available, reasonable estimates may be given.

Report multiple job holders only once: Report an employee who performs work in two or more of the listed occupations in the job that you believe requires the *highest level of skill.* If there is no measureable difference in skill requirements, report the employee in the occupation in which he spends most of his time.

Report employees in the occupation in which they are working, not in an occupation for which they may have been trained, if that is different. For example, an employee trained as an Engineer but working as a Drafter, should be reported as a Drafter.

Report working supervisors (those spending 20% or more of their time at work similar to that performed by workers under their supervision) in the occupations which are most closely related to their work duties.

Report part-time workers, learners, and apprentices in the occupation in which they ordinarily perform their work.

Report skilled trade helpers in the occupation "Helper, Trades." Report operative helpers, not separately listed, in the "All Other Operatives and Semiskilled Workers" category.

Report Apprentice and Research and Development workers in the shaded spaces provided. Please note that Apprentices and R&D workers should also be *included* in the "total" figure. Report R&D workers whether or not R&D is the primary function of your unit. See definitions for Apprentice and R&D workers below.

3. **Add all "Total" entries** and record the overall total of all employees at the end of the report. This figure should equal Unit Total Employment on page 1 (Part I, Item D).

4. **Supplemental Sheet.** Complete this page if you have reported workers in any "All Other" category who are in occupations that are either numerically important in your operation or that require substantial training. This page will be used to modify occupational lists in subsequent surveys.

DEFINITIONS:

Apprentices: Workers who learn, according to a written or oral contractual agreement, a recognized skilled craft or trade requiring more than two (2) years of on-the-job training through job experience supplemented by related instructions, prior to the time that they may be considered qualified workers.

- **DO NOT COUNT** helpers and learners as apprentices.

Research and Development: Include in this function employees who spend the greatest proportion of their time performing, managing, or administering basic and applied research in engineering, mathematics, physical, life (including medicine), and other sciences; and in the design and development of prototypes and processes. For purposes of this study, research and development *includes* the following types of activities: (a) Pursuit of planned research of new knowledge, whether or not the research has reference to a specific application. (b) Application of existing knowledge to problems involved in the creation of a new product or process, including work required to evaluate possible uses. (c) Application of existing knowledge to problems involved in the improvement of an existing product or process.

EMPLOYMENT BY OCCUPATION

Occupations PART II — Please report number of your employees by occupation.	Number of Employees	Office Code
MANAGERS AND OFFICERS		
MANAGERS AND OFFICERS (*INCLUDE* CORPORATE OFFICERS; PLANT MANAGER; DISTRICT MANAGER; OFFICE MANAGER; SALES MANAGER; ETC.; *EXCLUDE* OWNERS AND PARTNERS OF UNINCORPORATED FIRMS): Include persons concerned with policy making, planning, organizing, staffing, directing, and/or who directly supervise the activities of the company or establishment work force and/or professional or technical management-support personnel. Also include persons responsible for the operation of an enterprise or establishment (usually small-scale) in which they may engage, in part, in the same activities as the workers they supervise, but who also directly organize, control, and coordinate activities, do the planning, and who may be responsible for such matters as financing. (Include *only* Managers and Officers who are exempt from the minimum wage and overtime provisions of the Fair Labor Standards Act.)	R&D + Non R&D =	100003
	R&D Only	100005
PROFESSIONAL AND TECHNICAL OCCUPATIONS ***Professional Occupations*: Include persons concerned with the theoretical or practical aspects of such fields as science, engineering, technical work, art, education, medicine, law and business relations. Most of these occupations require substantial educational preparation, usually at the university level. Typical examples are: Architect; Engineer (including Sales Engineer); Chemist; Metallurgist; Physicist; Mathematician; Statistician; Biologist; Economist; Accountants and Auditors; Purchasing Agent; Public Relations Specialist; Personnel and Training Specialist (other than Departmental Manager); Lawyer; Physicians and Surgeons; Registered Nurse; Editors and Writers. *Technical Occupations:* Include all persons actually engaged in technical work utilizing theoretical knowledge of fundamental scientific, engineering, mathematical, computer programming or draft design principles, comparable to those acquired through study at technical institutes, junior colleges or acquired through other formal post high school training less extensive than a 4-year college course, or through equivalent on-the-job training or experience. *Note: Quality Control Professional and Technical Workers* should be reported according to the nature of the quality control process (i.e. chemical, mechanical, biological). Thus, an Engineer engaged in quality control work of a chemical nature should be reported as a Chemical Engineer.**		
● *SELECTED NONSCIENTIFIC OCCUPATIONS*		
ACCOUNTANTS AND AUDITORS (COST ACCOUNTANT; FIELD ACCOUNTANT; BUDGET ACCOUNTANT; TAX ACCOUNTANT; ETC.): Examines, analyzes, and interprets accounting records for the purpose of giving advice or preparing statements and installing or advising on systems of recording costs or other financial and budgetary data. *Exclude* tax preparers who are not professional accountants.		254013
PURCHASING AGENT AND/OR BUYER: Purchases machinery, equipment, tools, raw materials, parts, services, and supplies necessary for operation of an organization.		253003
LAWYER (CORPORATE COUNSEL; ETC.): Conducts criminal and civil lawsuits, draws up legal documents, advises clients as to legal rights, and practices other phases of law. May represent client in court, or before quasi-judicial or administrative agencies of government. May specialize in a single area of law such as patent law; corporate law; etc.		254463

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EMPLOYMENT BY OCCUPATION

Occupations	Number of Employees	Office Code
MINING ENGINEER (MINE RESEARCH ENGINEER; MINE EXPLORATION ENGINEER; MINE PRODUCTION ENGINEER; ETC.): Determines location and plans extraction of coal, metallic ores, non-metallic minerals, and building materials such as stone and gravel. Work involves: Conducting preliminary surveys of deposits or undeveloped mines and planning their development; examining deposits or mines to determine whether they can be worked at a profit, making geological and topographical surveys; evolving methods of mining best suited to character, type, and size of deposits; supervising all mining operations;etc.	R&D + Non R&D =	210103
	R&D Only	210105
SAFETY ENGINEER (FIRE-LOSS-PREVENTION ENGINEER; ETC.): Applies knowledge of industrial processes, mechanics, chemistry, psychology, and industrial health and safety laws to prevent or correct injurious environmental conditions and minimize effects of human traits which create hazards to life and property or reduce worker morale and efficiency.	R&D + Non R&D =	210123
	R&D Only	210125
CHEMICAL ENGINEER (COMBUSTION ENGINEER; HEAT-TRANSFER ENGINEER; SEPARATION ENGINEER; CHEMICAL PROCESSES DESIGN ENGINEER; ETC.): Designs chemical plant equipment and devises processes for manufacturing chemicals and products such as gasoline, synthetic rubber, plastics, detergents, cement, and paper and pulp, applying principles and technology of chemistry, physics, and engineering.	R&D + Non R&D =	210033
	R&D Only	210035
METALLURGISTS AND METALLURGICAL ENGINEERS (EXTRACTIVE METALLURGIST; PHYSICAL METALLURGIST; METALLURGICAL SALES ENGINEER; ETC.): When engaged in physical metallurgy: Investigates properties and treatment of metals to develop new alloys, new uses of metals and alloys, and methods of producing them commercially. When engaged in extractive metallurgy: Originates, controls, and develops flotation, smelting, electrolytic, and other processes used in winning metals from their ores.	R&D + Non R&D =	210093
	R&D Only	210095
ALL OTHER ENGINEERS (ELECTRICAL AND ELECTRONIC ENGINEERS; NUCLEAR ENGINEER; AIR-POLLUTION ENGINEER; ETC.): Include all other engineers *not* classified above. *Please identify on Part III (at the end of this form) all significant occupations included in this category.*	R&D + Non R&D =	219003
	R&D Only	219005
ENGINEERING TECHNICIANS: Include technicians concerned with the practical application of physical laws and principles of engineering for the development and utilization of machines, materials, instruments, structures, processes, and services.		
MECHANICAL ENGINEERING TECHNICIAN: Applies theory and principles of mechanical engineering to develop and test machinery and equipment under direction of engineering staff and physical scientists.	R&D + Non R&D =	320103
	R&D Only	320105
INDUSTRIAL ENGINEERING TECHNICIAN: Studies and records time, motion, methods and speed involved in performance of production, maintenance, clerical and other worker operations for such purposes as establishing standard production rates or improving efficiency. Usually works under the direction of engineering staff.	R&D + Non R&D =	320193
	R&D Only	320195
CIVIL ENGINEERING TECHNICIAN: Applies theory and principles of civil engineering in planning, designing and overseeing construction and maintenance of structures and facilities under the direction of engineering staff and physical scientists.	R&D + Non R&D =	320203
	R&D Only	320205

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EMPLOYMENT BY OCCUPATION

Occupations	Number of Employees	Office Code
SCIENCE TECHNICIANS (CHEMICAL-LABORATORY TECHNICIAN; PHYSICAL SCIENCE TECHNICIAN; BIOLOGICAL SCIENCE TECHNICIAN; ETC.; *EXCLUDE* MEDICAL AND DENTAL TECHNICIANS): Assist Physical and Life Scientists in both laboratory and production types of activities. Normally, these technicians work under the direct supervision of a scientist and assist in those functions usually described as routine at the professional level. *Exclude* Medical and Dental Technicians.	R&D + Non R&D =	330003
	R&D Only	330005
ALL OTHER PROFESSIONAL WORKERS (SOCIAL SCIENTIST; PROFESSIONAL NURSE; ARCHITECT; ETC.): Include all other professional workers *not* classified above. *Please identify on Part III (at the end of this form) all significant occupations included in this category.*	R&D + Non R&D =	290003
	R&D Only	290005
ALL OTHER TECHNICIANS (MEDICAL AND DENTAL TECHNICIANS; LICENSED PRACTICAL NURSE; ETC.): Include all other technicians *not* classified above. *Please identify on Part III (at the end of this form) all significant occupations included in this category.*	R&D + Non R&D =	390003
	R&D Only	390005
SALES OCCUPATIONS		
SALES REPRESENTATIVE, SALES AGENT, AND/OR SALES ASSOCIATE (*EXCLUDE* SALES ENGINEER): Include persons concerned wholly or primarily with selling when knowledge of the goods or services sold is required. *Exclude* Sales Engineer; Sales Route Driver; and Cashier.		710003
SALES CLERK (*EXCLUDE* CASHIER): Sells any of a large variety of goods or services, usually inexpensive and *not requiring much more knowledge of them other than price.* May write sales slips and ring up sale. Note: Sales persons who have more than a cursory knowledge of the product should be reported under Sales Representative, Agent, and/or Associate.		720023
CLERICAL OCCUPATIONS		
Include office and plant clerical personnel. *Office clerical work* involves preparing, transcribing, transferring, systematizing, and preserving communications and records; collating accounts and distributing information. Typical examples are: Secretaries; Stenographers; Typists; File Clerks; Office Machine Operators; Bookkeepers; Cashiers; Messengers; Telephone Operators; etc. *Plant clerical work* involves planning, coordinating, or expediting production and the flow of work; or the clerical aspects of receiving, storing, issuing, or shipping of materials, merchandise, supplies, or equipment.		
CLERICAL SUPERVISOR, OFFICE OR PLANT (TYPING SUPERVISOR; STOCK CLERK SUPERVISOR; BILLING SUPERVISOR; ETC.; *EXCLUDE* OFFICE MANAGER): Supervises and coordinates activities of workers engaged chiefly in one type of clerical function such as typing, filing, bookkeeping, tabulating data, etc. May assume responsibility for completion of work assignments by clerical force being supervised and for the accuracy of completed assignments. This classification does *not* include Working Supervisors (those spending 20 percent or more of their time at tasks similar to those of employees under their supervision).		613963

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09/27/82 REPORT 01: MATCHED RECORDS PAGE-

INPUT FILE			MASTER FILE				
EMPLOYER-JOB-TITLE	SIC	OWN	SOC	DOT-IND	SOC-JOB-TITLE	TR-C	I.D.
ACCOUNTANT	4511	5	1412	705	ACCOUNTANTS AND AUDITORS		
ACCOUNTANT	4811	5	1412	705	ACCOUNTANTS AND AUDITORS		
ACCOUNTING CLERK	3573	5	4712	249	BOOKKEEP, ACCOUNT, AUDIT CLERKS		UT
ACCOUNTING CLERK	3585	5	4712	249	BOOKKEEP, ACCOUNT, AUDIT CLERKS		UT
ATTORNEY	4811	5	2110	705	LAWYERS		UT
BELL PERSON	7011	5	5262	453	BAGGAGE PORTERS & BELLHOPS		UT
BOOKKEEPER	3585	5	4712	249	BOOKKEEP, ACCOUNT, AUDIT CLERKS		UT
CASHIER	4511	5	4364	999	CASHIERS		UT
CASHIER	4811	5	4364	999	CASHIERS		UT
CLERK/TYPIST	4511	5	4624	249	TYPISTS		UT
COLLECTOR	4811	5	4786	999	BILL AND ACCOUNT COLLECTORS		UT
COMPUTER OPERATOR	3511	5	4612	249	COMPUTER OPERATORS		UT
COMPUTER OPERATOR	3573	5	4612	249	COMPUTER OPERATORS		UT
COMPUTER OPERATOR	4511	5	4612	249	COMPUTER OPERATORS		UT
CONTROLLER	3511	5	1220	705	FINANCIAL MANAGERS		UT
CONTROLLER	3573	5	1220	705	FINANCIAL MANAGERS		UT
CONTROLLER	7011	5	1220	705	FINANCIAL MANAGERS		UT
DESIGNER	3585	5	3220	999	DESIGNERS		UT
DRAFTER	3573	5	3720	999	DRAFTING OCCUPATIONS		UT
DRAFTER	3585	5	3720	999	DRAFTING OCCUPATIONS		UT
EXECUTIVE SECRETARY	4511	5	4622	999	SECRETARIES		UT
EXECUTIVE SECRETARY	7011	5	4622	999	SECRETARIES		UT
FILE CLERK	3585	5	4696	249	FILE CLERKS		UT
FILE CLERK	4811	5	4696	249	FILE CLERKS		UT
FILE CLERK	4811	5	4696	249	FILE CLERKS		UT
FRAME ATTENDANT	4811	5	6881	869	PRECISION INSPECT, TEST, GRADE		UT
GENERAL MANAGER	7011	5	1210	999	GEN MANAGERS; OTHER TOP EXECS		UT
GUARD	3573	5	5144	999	GUARDS, POLICE EXCEPT PUBLIC		UT
HANDYMAN	3585	5	6179	138	MECHANICS AND REPAIRERS, NEC		UT
KEYPUNCH OPERATOR	3511	5	4793	249	DATA ENTRY KEYERS		UT
KEYPUNCH OPERATOR	3573	5	4793	249	DATA ENTRY KEYERS		UT
MAIL CLERK	3573	5	4744	249	MAIL CLERKS		UT
MAIL CLERK	4511	5	4744	249	MAIL CLERKS		UT
MAIL CLERK	4811	5	4744	249	MAIL CLERKS		UT
MATERIAL HANDLER	3423	5	8726	138	FREIGHT, STOCK, MATERIAL MOVERS		UT
MATERIAL HANDLER	3511	5	8726	138	FREIGHT, STOCK, MATERIAL MOVERS		UT
MESSENGER	4811	5	4745	138	MESSENGERS		UT
OFFICE MANAGER	4811	5	1370	138	MANAGERS; ADMIN SERVICES		UT
RECEPTIONIST	3511	5	4645	249	RECEPTIONISTS		UT
RECEPTIONIST	7011	5	4645	249	RECEPTIONISTS		UT
SECRETARY	3511	5	4622	249	SECRETARIES		UT
SECRETARY	3573	5					

SECRETARY	4511	5		4622	249	SECRETARIES		UT
SECRETARY	4811	5		4622	249	SECRETARIES		UT
SECURITY GUARD	3423	5		5144	138	GUARDS AND POLICE, EXCEPT PUB SE		UT
SECURITY GUARD	3511	5		5144	138	GUARDS AND POLICE, EXCEPT PUB SE		UT
SHIPPING CLERK	3573	5		4753	249	TRAFFIC, SHIP, RECEIVE CLERK		UT
STENOGRAPHER	3585	5		4623	249	STENOGRAPHERS		UT
STENOGRAPHER	4811	5		4623	249	STENOGRAPHERS		UT
STOCK CLERK	4511	5		4754	138	STOCK AND INVENTORY CLERKS		UT

INPUT FILE

MASTER FILE

EMPLOYER-JOB-TITLE	SIC	OWN		SCC	DOT-IND	SCC-JOB-TITLE	TR-C	I.D.
STOCK HANDLER	3423	5		4754	138	STOCK AND INVENTORY CLERKS		UT
TECHNICAL WRITER	3573	5		3980	705	TECHNICAL WRITERS		UT
TECHNICAL WRITER	3585	5		3980	705	TECHNICAL WRITERS		UT
TECHNICAL WRITER	4511	5		3980	705	TECHNICAL WRITERS		UT
TYPIST	4811	5		4624	249	TYPISTS		UT
VICE PRESIDENT	4811	5		1210	138	GEN MANAGERS, OTHER TOP EXECS		UT
WAITER	7011	5		5213	999	WAITERS AND WAITRESSES		UT
WAITRESS	7011	5		5213	999	WAITERS AND WAITRESSES		UT

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09/29/82 REPORT 02: NON-MATCHED INPUT RECORDS

INPUT FILE			MASTER FILE					
EMPLOYER-JOB-TITLE	SIC	OWN	SOC	DOT-IND	SOC-JOB-TITLE	T-S-C	I.D.	Rec
ACCOUNTING ASSISTANT	4811	5						
ACCOUNTING ASSISTANT	4811	5						
ACCOUNTING SPECIALIST	4811	5	1412	705	Accountants and Auditors	NC	1	
ACCOUNTS CLERK	3585	5	4718	751	Billing, Posting and Calculating Machine Operators	NC	1	
ACCOUNTS MANAGER	4511	5						
ACTING CHIEF OPERATOR	4811	5	4323	249	Chief Communications Operators	NC	2	
ADMINISTRATIVE CLERK	4811	5	4632	249	Stenographers	NC	1	
ADVANCE PLANNER	3511	5						
AIRFOIL GRINDER	3511	5	6116	123	Aircraft Mechanics (except engine specialists)	NC	3	
ANALYSIS CLERK	4811	5						
ANALYSIS CLERK	4811	5						
APPLICATIONS ENGINEER	3585	5						
AREA MANAGER, DETAILS	3511	5						
ASSEMBLER-FITTER	3511	5	6812	351	Precision Assemblers (Metal)	NC	2	
ASSEMBLER/HELPER	3585	5	7720	998	Assemblers	NC	1	
ASSIGNMENT CLERK	4811	5	4699	869	Record Clerks, Not Elsewhere Classified	NC	1	
ASSIGNMENT FOREMAN	4811	5						
ASSISTANT BUYER	3511	5	1442	741	Purchasing Agents and Buyers	NC	2	
ASSISTANT COMPTROLLER	4811	5	1220	705	Financial Managers	NC	3	
ASSISTANT SECRETARY	4811	5	4622	249	Secretaries	NC	2	
ASSISTANT TREASURER	4811	5						
ASSOCIATE BUYER	3511	5						
AUDITING CLERK	4511	5	4712	249	Bookkeepers and Accounting and Auditing Clerks	NC	1	
AUTOMOTIVE MECHANIC	4811	5	6111	154	Automobile Mechanics	NC	2	
AUTOMOTIVE MECHANIC	4811	5	6114	154	Automobile Mechanics	NC	2	
AVIONICS TECHNICIAN	4511	5	6151	123	Communications Equipment Repairers	NC	1	
BAKER	7011	5	5214	453	Cooks, Except Short Order	NC	1	
BARTENDER	7011	5	5212	453	Bartenders	NC	1	
BENEFIT CLERK	4811	5						
BILLING CLERK	4511	5	4715	125	Billing Clerks	NC	2	
BRAZER	3511	5						
BUDGET ANALYST	4511	5						
BUILDING CUSTODIAN	4811	5	5244	903	Janitors and Cleaners	NC	3	
BUILDING MECHANIC	4811	5						
BUILDING MECHANIC	4811	5						
BUILDING SUPERVISOR	4811	5						
BUYER	3511	5	1444	705	Purchasing Agents and Buyers	NC	1	
BUYER	3573	5	1444	705	Purchasing Agents and Buyers	NC	1	
BUYER	4511	5	1444	705	Purchasing Agents and Buyers	NC	1	
BUYERS ASSISTANT	4511	5	1442	741	Purchasing Agents and Buyers	NC	1	
CALCULATING CLERK	4811	5						
CAMP MANAGER	4811	5	1351	271	Managers, Food Serving and Lodging Establishments	NC	2	
CAPTAIN, B727-100	4511	5	8250	125	Airplane Pilots and Navigators	NC	3	
CAPTAIN, B737	4511	5	8250	125	Airplane Pilots and Navigators	NC	3	
CAPTAIN, YS11	4511	5	8250	125	Airplane Pilots and Navigators	NC	3	
CHECKER-PACKER	3511	5	3761	999	Hand Packers and Packagers	NC	2	
CHIEF CLERK	4811	5						
CHIEF FLIGHT ENGINEER	4511	5	8250	125	Airplane Pilots and Navigators	NC	2	
CLEANER	4511	5						
CLEANER	4511	5						

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INPUT FILE			MASTER FILE				
EMPLOYER-JOB-TITLE	SIC	OWN	SCC	DOT-IND	SCC-JOB-TITLE	TYP-C	T.O.	PASS
CLERICAL TRAINEE	3585	5	4630	249	General Office Occupations		NC	2
CLERK	3573	5	4630	249	General Office Occupations		NNC	1
CLERK-TYPIST	3573	5	4624	249	Typists		NNC	1
COACH	4811	5						
COMMERCIAL ENGR	4811	5	1633	724	Electrical and Electronic Engineers		NC	1
COMMERCIAL SVR	4811	5						
COMPTROLLER	4811	5	1220	999	Financial Managers		NC	3
COMPUTER ATTENDANT	4811	5						
COMPUTER TECHNICIAN	4511	5						
CONCAVING OPERATOR	3423	5	7659	176	Miscellaneous Textile Working Operatives and Finishers		NC	1
CONTROL CLERK	4811	5	4699	999	Record Clerks, Not Elsewhere Classified		NNC	1
CONTROL OPERATOR	4811	5	4523	997	Chief Communications Operators		NNNC	2
CONTROL OPERATOR	4811	5	4523	979	Chief Communications Operators		NNNC	2
COOK	4511	5	5210	999	Food and Beverage Preparation and Service Occupations (Except)		NNNC	1
CORPORATE ATTORNEY	4511	5	2110	105	Lawyers		NNNC	2
COST ACCOUNTING	3585	5	1412	705	Accountants and Auditors		NNNC	3
COST ENGINEER	4811	5	1419	001	Other Financial Officers		NNNC	3
CREDIT ANALYST	4511	5	1419	249	Other Financial Officers		NNNC	3
CUSTODIAN	3585	5	5244	136	Janitors and Cleaners		NNNC	1
CUSTOMER INSTRUCTOR	4811	5	2390	869	Misc. Education and Other Teachers Not Elsewhere Classified		NNC	1
DETAILER	3585	5	3720	705	Drafting Occupations		NC	2
DEVELOPMENT ENGINEER	4811	5	1633	532	Electrical and Electronic Engineers		N	
DIAL TRAFFIC ENGINEER	4811	5						
DIRECTOR-PA	4511	5						
DIRECTOR, CARGO SALES	4511	5						
DIRECTOR, GROUND SAFETY	4511	5						
DIRECTOR, SALES	4511	5						
DIRECTOR, SECURITY	4511	5	1131	999	Judicial, Public Safety and Corrections Administrators		NC	2
DIRECTOR, TARIFFS	4511	5						
DIRECTOR, TAXES	4511	5						
DIRECTOR, TRAINING	4511	5	1283	335	Administrators, Education and Related Fields Not Elsewhere Cl.		NC	3
DIRECTORY ADVERTISING	4811	5						
DIRECTORY ENGINEER	4811	5						
DIRECTORY SUPERVISOR	4811	5						
DISPATCHER	3511	5	4751	249	Dispatchers		NC	1
DISPATCHER	4511	5	3420	125	Air Traffic Controllers		NNC	
DISPATCHING CLERK	4811	5	4751	869	Dispatchers		NC	2
DISTRICT AUDITOR	4811	5	1412	705	Accountants and Auditors		N	
DISTRICT CHIEF CLERK	4811	5						
DISTRICT ENGINEER	4811	5						
DISTRICT INSTRUCTION	4811	5						
DISTRICT MANAGER	4811	5						
DISTRICT PLANT MANAGER	4811	5	4010	999	Supervisors, Sales Occupations, Insurance, Real Estate and Business Services		NC	2
DISTRICT SALES MANAGER	4511	5	4010	999	Supervisors, Sales Occupations, Insurance, Real Estate and Business Services		NC	2
DISTRICT SALES MANAGER	4811	5	8250	125	Airplane Pilots and Navigators		NC	2
DIVISION CHIEF PILOT	4511	5						
DIVISION INSTRUCTOR	4811	5	4010	999	Supervisors, Sales Occupations, Insurance, Real Estate and Business Services		NC	2
DIVISION SALES MANAGER	4811	5						
DIVISION SUPERVISOR	4811	5						
DRAFTER/TECHNICIAN	3585	5	3720	705	Drafting Occupations		NC	3

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INPUT FILE			MASTER FILE				
EMPLOYER-JOB-TITLE	SIC	OWN	SOC	DOT-IND	SOC-JOB-TITLE	I.O.	PASS
DRAFTING SUPERVISOR	4811	5					
DRAWING SUPERVISOR	4811	5	7100	999	Supervisors, Production Occupations	NC	2
DRILL PRESS OPERATOR A	3585	5	7518	561	Drilling and Boring Machine Operators and Tenders	NC	1
DRILL PRESS OPERATOR B	3585	5	7518	561	Drilling and Boring Machine Operators and Tenders	NC	1
EMPLOYMENT SUPERVISOR	4811	5	1230	705	Personnel and Labor Relations Managers	NC	3
ENGINEER	3585	5					
ENGINEER	4511	5					
ENGINEER	4811	5					
ESTIMATOR	3585	5					
FABRICATION WELDER A	3585	5					
FABRICATION WELDER B	3585	5					
FABRICATION WELDER C	3585	5					
FACILITIES DATA CLERK	4811	5					
FINANCIAL PLANNER	3585	5					
FINANCIAL SPECIALIST	3511	5					
FITTER-CONTROLS	3511	5	6812	138	Precision Assemblers (Metal)	NC	1
FLIGHT ATTENDANT	4511	5	5257	125	Public Transportation Attendants	NC	2
FLOOR SUPERVISOR	7011	5					
FORECAST SUPERVISOR	4811	5					
FOREMAN-INT-GAG	4511	5					
FREIGHT LOADER	3423	5	8726	999	Freight, Stock and Material Movers, Not Elsewhere Classified	NC	2
GARAGE FOREMAN	4311	5					
GEM OPERATOR	3511	5					
GENERAL ACCOUNTANT	4811	5	1412	705	Accountants and Auditors	NC	2
GENERAL ATTORNEY	4811	5	2111	705	Lawyers	NC	2
GENERAL CASHIER	7011	5	4364	249	Cashiers	NC	2
GENERAL CLERK	3585	5	4630	249	General Office Occupations	NC	2
GENERAL CLERK	4511	5	4630	249	General Office Occupations	NC	2
GENERAL CLERK	4811	5	4630	249	General Office Occupations	NC	2
GENERAL COUNSEL	4811	5					
GRAPHICS ASSISTANT	4811	5					
HEALTH SUPERVISOR	4811	5					
HEAT TREAT OPERATOR	3423	5	7594	444	Heating Equipment Operators and Tenders	NC	1
HOSTESS	4811	5	5269	130	Personal Service Occupations, Not Elsewhere Classified	NC	1
INDUSTRIAL ENGINEER	3573	5	1634	705	Industrial Engineers	NC	1
INDUSTRIAL NURSE	3511	5					
INSPECTOR	4511	5					
INSPECTOR	4511	5					
INSTALLATION FOREMAN	4811	5					
INSTRUCTOR-PAI	4511	5	8250	335	Airplane Pilots and Navigators	NC	1
INTERIOR CLEANER	4511	5					
INTERNAL AUDITOR	4511	5	1412	705	Accountants and Auditors	NC	2
INVENTORY AUDITOR	3573	5					
INVOICE SUPERVISOR	4811	5					
JANITOR-INT-GAG	4511	5	5244	138	Janitors and Cleaners	NC	1
JANITOR-PAI	4511	5	5244	138	Janitors and Cleaners	NC	1
JOB SET	3423	5	7329	557	Miscellaneous Metalworking and Plastic Working Machine Setup Operators	NC	1
JOB SETTER	3423	5	7329	557	Miscellaneous Metalworking and Plastic Working Machine Setup Operators	NC	1
JOB SETTER-GENERAL	3423	5	7329	557	Miscellaneous Metalworking and Plastic Working Machine Setup Operators	NC	1
JUNIOR BUYER	4511	5					

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REPORT 02: NON-MATCHED INPUT RECORDS

INPUT FILE			MASTER FILE				
EMPLOYER-JOB-TITLE	SIC	OWN	SCC	DOT-IND	SCC-JOB-TITLE	TYP-C-I-O	PASS
JUNIOR ENGINEER	4811	5					
JUNIOR PROGRAMMER	4511	5	3971	705	Programmers, Business	NC	2
LAB TECHNICIAN	3585	5					
LACQUER MACHINE	3423	5				NC	1
LANDSCAPE GARDENER	3423	5	5515	116	Horticultural Specialty Farmers		
LATH LOADER	3423	5				NC	1
LATH SAW OPERATOR	3585	5	7512	561	Lathe and Turning Machine Operators and Tenders	NC	1
LATHE OPERATOR A	3585	5	7512	561	Lathe and Turning Machine Operators and Tenders	NC	2
LATHE OPERATOR B	3585	5	3960	705	Legal Technicians		
LAW CLERK	4811	5					
LEAD CLEANER	4511	5				NC	1
LEAD MECHANIC	4511	5	5149	133	Protective Service Occupations, Not Elsewhere Classified		
LIFEGUARD	7011	5				NC	2
LINE CHIEF-RUA-GAG	4511	5	6000	869	Supervisors; Mechanics and Repairers		
LINE FOREMAN	4811	5					
LINE INSPECTOR	3423	5					
LITERATUR PACKER	3423	5				NC	1
LTUC OPERATOR	3511	5	6130	138	Industrial Machinery Repairers	NC	1
MACHINE REPAIRMAN A	3423	5	6130	138	Industrial Machinery Repairers	NC	1
MACHINE REPAIRMAN B	3423	5	6130	138	Industrial Machinery Repairers	NC	1
MACHINE REPAIRMAN C	3511	5	6813	561	Machinists		
MACHINIST	3423	5					
MAINTENANCE GENERAL	4811	5					
MANAGER	3511	5					
MANAGER TOOLING	3511	5				NC	2
MANAGER 2ND SHIFT	3511	5	4752	999	Production and Planning Clerks	NC	1
MANAGER 3RD SHIFT	3573	5	4754	249	Stock and Inventory Clerks		
MATERIAL ANALYST	3573	5					
MATERIAL CLERK	3573	5					
MATERIAL DISPATCHER	3511	5					
MATRIX OPERATOR	3585	5					
MECHANIC	4511	5					
MECHANIC	4511	5					
MECHANIC	4511	5					
MECHANIC HELPER	3573	5					
MECHANICAL DISPATCHER	4811	5					
MEDICAL DIRECOR	4511	5					
MEDICAL DIRECTOR	4811	5				NC	1
METHODS SUPERVISOR	3423	5	6861	829	Precision Hand Molders and Shapers (except jewelers)	NC	1
MODEL MAKER A	3573	5	6861	829	Precision Hand Molders and Shapers (except jewelers)	NC	1
MODEL MAKER A	3423	5	6861	829	Precision Hand Molders and Shapers (except jewelers)	NC	1
MODEL MAKER B	3573	5	6861	829	Precision Hand Molders and Shapers (except jewelers)	NC	1
MODEL MAKER B	3423	5	6861	829	Precision Hand Molders and Shapers (except jewelers)	NC	3
MODEL MAKER C	3585	5	6861	829	Precision Hand Molders and Shapers (except jewelers)		
MOLDER/HELPER	3511	5					
NAZEL HAMMER	4811	5				NC	2
NETWORK CLERK	4811	5	3312	699	Clerks,	NC	2
NETWORK CLERK	4811	5	4643	433	Mail Sorters		
NEWS EDITOR	7011	5					
NIGHT CLERK							

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INPUT FILE			MASTER FILE					
EMPLOYEE-JOB-TITLE	SIC	OWN	SOC	DOT-IND	SOC-JOB-TITLE	TR=C	I.D.	CASS
NIGHT MANAGER	7011	5	1351	453	Managers; Food Serving and Lodging Establishments		NC	2
NIGHT SUPERVISOR	7011	5	1351	453	Managers; Food Serving and Lodging Establishments			
NURSE	4811	5						
OILER	3423	5						
PACKER GENERAL	3423	5	8761	999	Hand Packers and Packagers		NC	1
PAINTER A	3585	5						
PAINTER B	3585	5						
PARTS CLERK	3573	5	4754	249	Stock and Inventory Clerks		NC	1
PATTERN PARTS CUTTER	3585	5						
PAYROLL ACCOUNTANT	4511	5						
PAYROLL CLERK	3585	5	4713	249	Payroll and Timekeeping Clerks		NC	1
PAYROLL CLERK	7011	5	4713	249	Payroll and Timekeeping Clerks		NC	1
PAYROLL SUPERVISOR	4811	5	4521	249	Supervisors; Financial Record Processing Occupations		NC	3
PERSONNEL ASSISTANT	3585	5						
PERSONNEL ASSISTANT	4211	5						
PERSONNEL CLERK	4811	5	4692	249	Personnel Clerks, Except Payroll and Timekeeping		NC	1
PLANT ACCOUNTANT	4811	5						
PLANT FOREMAN	4811	5						
PLANT MANAGER	4811	5						
POWER ENGINEER	4811	5	1633	532	Electrical and Electronic Engineers		NC	3
PRECISION MACHINEST	3423	5	6813	561	Machinists		NC	3
PRESETTER	3511	5						
PRESIDENT	4811	5						
PRETOOL & SETUP	3511	5						
PRICING ANALYST	4511	5						
PRINT OPERATOR-SET UP	3423	5						
PRINTER	4511	5						
PRINTER IRON BENCH	3423	5						
PRINTER'S HELPER	4511	5	8616	699	Helpers, Printing Machine Operators and Tenders		NC	3
PRINTING OPERATOR	3423	5						
PROCESSING CLERK	4811	5						
PROCESSING CLERK	4811	5						
PRODUCT ASSEMBLER A	3585	5	7720	138	Assemblers			
PRODUCT ASSEMBLER B	3585	5	7720	138	Assemblers			
PRODUCT ASSEMBLER C	3585	5	7720	138	Assemblers			
PRODUCT ENGINEER	3511	5						
PRODUCTION MANAGER	4811	5	1320	138	Production Managers, Industrial		NC	3
PRODUCTION TECHNICIAN	4511	5						
PROGRAMMER	4511	5	3971	705	Engineers, Business		NC	1
PROGRAMMER ANALYST	3573	5	1712	004	Computer Systems Analysts		NC	2
PROGRAMMER/ANALYST	3585	5	1712	004	Computer Systems Analysts		NC	2
PROJECT COORDINATOR	3585	5	1390	705	Officials and Administrators; Other, Not Elsewhere Classified		NC	3
PROJECT MANAGER	3585	5	1390	705	Officials and Administrators; Other, Not Elsewhere Classified		NC	1
PURCHASING AGENT	4511	5	1449	705	Purchasing Agents and Buyers, Not Elsewhere Classified		NC	1
PURCHASING TRAINEE	4511	5						
QUALITY ENGINEER	3573	5						
QUALITY TECHNICIAN A	3573	5	3890	705	Science Technologists and Technicians, Not Elsewhere Classified		NC	1
QUALITY TECHNICIAN B	3573	5	3890	705	Science Technologists and Technicians, Not Elsewhere Classified		NC	1
QUALITY TECHNICIAN C	3573	5	3890	705	Science Technologists and Technicians, Not Elsewhere Classified		NC	1
RACK CLEANER LATH	3423	5						

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INPUT FILE			MASTER FILE				
SHRECOVER-JOB-TITLE	SIC	OAN	SOC	DOT-IND	SCC-JOB-TITLE	I YR-C I I.O.	PASS
RACK REPAIRER	3423	5					
RACKER PLATING	3423	5					
RELIEF DISPATCHER	4511	5	3920	125	Air Traffic Controllers	NC	2
REPAIR CLERK	4811	5	4752	249	Production and Planning Clerks	NC	1
REPAIR TAPE RULES	3423	5	6179	194	Mechanics and Repairers, Not Elsewhere Classified	NC	3
REPRODUCTION CLERK	4811	5	4752	249	Production and Planning Clerks	NC	1
RESEARCH ENGINEER	3585	5					
RESEARCH TECHNICIAN	3585	5					
RESERVE DISPATCHER	4511	5	3920	125	Air Traffic Controllers	NC	2
RETOUCHER	3423	5					
REVENUE AUDITOR	4511	5					
ROUTER SCALER	3423	5					
SAFETY SUPERVISOR	4811	5	1634	705	Industrial Engineers	NC	1
SALES COORDINATOR	3585	5					
SALES MANAGER	7011	5	1250	138	Managers; Marketing, Advertising, and Public Relations	NC	2
SALES REPRESENTATIVE	3665	5					
SALES REPRESENTATIVE	4511	5					
SALES SUPERVISOR	4811	5	4010	247	Supervisors; Sales Occupations, Insurance, Real Estate, and Business Services	NC	3
SALVAGE OPERATOR	3423	5					
SCHEDULER	3511	5					
SCHEDULER	3585	5					
SCHOOL INSTRUCTOR	4811	5					
SCRAP HANDLER	3423	5	7529	138	Miscellaneous Metalworking and Plastic Working Machine Operators, Tenders	NC	1
SCREEN MAKER	3423	5					
SECURITY OFFICER	7011	5	1490	138	Management Related Occupations Not Elsewhere Classified	NC	1
SENIOR ACCOUNTANT	3511	5	1412	705	Accountants and Auditors	NC	2
SENIOR ACCOUNTANT	4511	5	1412	705	Accountants and Auditors	NC	2
SENIOR BUYER	3511	5	1442	705	Buyers, Wholesale and Retail Trade, except farm products	NC	2
SENIOR CLERK	4811	5					
SENIOR DESIGNER	3585	5					
SENIOR DRAFTSPERSON	4511	5					
SENIOR ENGINEER	4511	5					
SENIOR PROGRAMMER	4511	5	3971	705	Programmers, Business	NC	2
SENIOR SYSTEMS ANALYST	3511	5	1712	004	Computer Systems Analysts	NC	2
SENIOR SYSTEMS ANALYST	4511	5	1712	004	Computer Systems Analysts	NC	2
SERVICE CONSULTANT	4811	5					
SERVICE EVALUATOR	4811	5	4716	999	Cost and Rate Clerks	NC	2
SERVICE FOREMAN	4811	5					
SERVICE ORDER TYPIST	4811	5	4624	249	Typists	NC	2
SERVICE ORDER WRITER	4811	5					
SHOP PLANNER	3511	5					
SIMULATOR ENGINEER	4511	5					
SIMULATOR INSTRUCTOR	4511	5					
SPECIAL CLERK	4811	5					
SPECIAL SERVICES CLERK	4811	5					
SR COMPUTER OPERATOR	3573	5	4612	249	Computer Operators	NC	2
SR DRAFTER	3573	5	3720	750	Drafting Occupations	NC	2
SR PROGRAMMER	3573	5	3970	705	Programmers	NC	2
SR PROGRAMMER ANALYST	3573	5	1712	004	Computer Systems Analysts	NC	2
STAFF ASSISTANT	4811	5					

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INPUT FILE			MASTER FILE					
EMPLOYER-JOB-TITLE	SIC	OWN	SCC	DOT-IND	SCC-JOB-TITLE	TRNG	I.O.	PASS
STATISTICIAN	4811	5	1733	705	Statisticians		NC	1
STOCK ATTENDANT	3573	5						
STUDENT ENGINEER	4811	5						
SUPERVISOR	4811	5						
SUPPLIES CLERK	4811	5	4754	249	Stock and Inventory Clerk		NC	2
SUPPLIES SUPERVISOR	4811	5						
SURVEY ENGINEER	4811	5						
SYSTEMS ANALYST	3511	5	1712	004	Computer Systems Analysts		NC	1
SYSTEMS PROGRAMMER	3573	5	3971	705	Programmers, Business		NC	2
SYSTEMS TECHNICIAN	4811	5						
TAX SUPERVISOR	4811	5						
TECHNICAL AIDE	4511	5						
TECHNICAL ASSISTANT	4811	5						
TECHNICAL CLERK	3573	5						
TECHNICAL ILLUSTRATOR	3573	5	3720	705	Drafting Occupations		NC	1
TECHNICIAN	3585	5						
TICKET CLERK	4811	5	4644	125	Reservation agents and Transportation Ticket Clerks		NC	1
TIMEKEEPER	3573	5	4713	249	Bunch and Sorting Clerks		NC	1
TOOL MAKER A	3423	5	6811	561	Tool and Die Makers		NC	1
TOOL MAKER B	3423	5	6811	561	Tool and Die Makers		NC	1
TOOL ROOM MACHINIST	3511	5						
TOOL ROOM UTILITY	3423	5						
TOOL WALL BOXER	3423	5						
TOOLMAKER A	3585	5	6811	561	Tool and Die Makers		NC	1
TOOLROOM KEEPER	3585	5						
TRAFFIC MANAGER	4811	5	1341	869	Communications Operations Managers		NC	2
TRAFFIC SUPERVISOR	4811	5						
TRAINING SUPERVISOR	4811	5						
TREASURER	4811	5	1220	705	Financial Managers		NC	1
TRUCK DRIVER	3585	5						
UTILITY CLEANER	3423	5						
UTILITY OPERATOR	3423	5	6960	237	Miscellaneous Plant or System Operators		NC	1
UTILITY OPERATOR	3511	5	6960	237	Miscellaneous Plant or System Operators		NC	1
UTILITY PLATER	3423	5						
UTILITY SERVICE	4511	5						
UTILITY SERVICEMAN	4911	5						
VOUCHER SUPERVISOR	4811	5						
WATCHMAN	4811	5	5144	138	Guards and Police, except Public Service			
WORD PROCESSOR	3585	5						
WORK ORDER CLERK	4511	5	4751	999	Dispatchers		NC	1
WORKING LEAD.RECEIVING	3573	5						
WORKING LEAD.SHIPPING	3573	5						

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